Is It’s Natural & Human Resources
MASONRY INDUSTRY POISED FOR LOCAL JOB GROWTH
by PAUL E KOCH

Economic Giant

An economic stimulus package to rebuild Michigan like no other with proven results is masonry. Local jobs for local workers keep the dollars circulating up to five fold in the local area! Local designers, local masons, local masonry manufacturers, local pride. Try it. You’ll like the local results.

Local/ˈloʊkəl/ adj & n ~ adj.: 1. -belonging to or existing in a particular place or places. 2. peculiar to or only encountered in a particular place or places. 3. of or belonging to the neighborhood. 4. in regard to a place. ~ n : a local person or thing; esp.: 1. an inhabitant of a particular place regarded with reference to that place.

Economic Balance
As our economy seeks to find balance in the new tumultuous market, we are forced to educate ourselves on market dynamics unimaginable only a few short months ago. One’s choices for purchases and actions have never been more important. Gone are the days of the enslaving “I had to do it.” Realizing the fact of one’s “choosing” to make a purchase decision empowers. “I choose to do it” entails to...
come into play. This fact is amplified in the construction industry. Our leaders (owners, designers and CMs) can choose to make socioeconomic decisions that can affect our local and state markets in a dramatic way. Lying just under the surface is a system patiently waiting to undergo its renaissance. With Michigan’s world class resources, natural, human and developmental, the market now is poised to recognize the Herculean properties inherent to Michigan’s own economic giant…masonry.

With its “cheaper, faster, better” qualities revealed so eloquently by Ed Davenport in the Benchmarking Educational Facilities 2008 issue of Story Pole, vol 39 no 5, it is almost impossible to believe the masonry industry’s economic model remains hidden. When exposed, incredible, almost unbelievable, depth is uncovered and can be demonstrated by accepted economic principles and models.

When the masonry system model is applied in conjunction with the local economic model, the outcome is a synergistic whole that is compounded and realized. Gone is the “buy local” model that is the accepted economic manifestation. One in which supporting local business means paying a little more locally to buy a t-shirt made in El Salvador, sending a portion of your dollars on to Central America. Masonry’s economic events penetrate, circulate and compound, churning like eddies in rivers, rolling money over and over perpetuating until even the very natural resources of Michigan are engaged in the event.

As far back as 25 BC, the understanding of the importance of local to construction materials and methods was well demonstrated. In his book deArchitectura, Vetruius [Architect to Caesar] wrote on building economy. “The architect is to avoid the use of materials which are not easily procured and prepared on the spot. For it cannot be expected that good pit-sand, stone, fir of any type or marble can be procured in plenty, but they must in some instances be brought from a distance, with much trouble and at great expense.” And later states “Each nation, in short, has it’s own way of building according to the materials afforded and the habits of it’s inhabitants.” Michigan is blessed with an abundance of highly skilled designers, constructors, masons, world renowned limestone deposits (for making mortars and cements), sands, aggregates, granite field stone, building stone quarries and water all necessary for the ultimate abundant system.

Economic Power
Simply put, masonry’s economic power lies in the allocation of its funds. Although the masonry industry has proven lower cost compared to other structural and veneer systems, the allocation of costs is very
different. In the masonry industry, principal costs rest in the labor segment. Roughly 60% of total costs in the masonry business is in middle class labor (this does not include management.)

Because materials are easily accessible locally and readily available in almost raw form (from the ground), materials and manufacturing costs are relatively low, offsetting any labor cost concerns. In effect, our suppliers are efficient, focused and ready at an extremely local (next door neighbor) level. In the steel industry, the opposite is seen. Mining, manufacturing, material fabrication and transportation costs take up a majority of the total cost, regularly occurring half way around the world. This means fewer wages for the middle class and again a higher toll on a failing infrastructure. Remember masonry is "cheaper, faster and better."

**Envy of the World**

An example of this can be found in Fanning/Howey Associates’ McKune Memorial Library in Chelsea. Designed from inception as a masonry bearing building, the new library is a monument to the local community. With O’Neal Construction at the helm, the library committee took special attention to address the community for qualified contractors’ participation.

As a result, the area pulled together and masons and tenders from Chelsea and the immediate surrounding areas were employed – directly injecting 60% of the masonry budget ($490,000 and approximately 9000 man-hours) into the hands of families to spend in the local economy. This gem not only provided the community with a low life-cycle cost present to future generations, but allowed the local designers and craftsmen and their families a facility with a special connection. The subsequent high use rate by the community was highlighted by its winning the prestigious national “Small Library of the Year” award.

Products used include mortars and grout from St Marys [Detroit], SpecMix [Holly/Detroit], architectural and regular CMU from Best Block, Fendt Builders’ Supply [Ann Arbor], brick from Belden [Canton, OH], aggregates and sand [Ann Arbor] and midwest stone. As you can see, materials are highly focused from the surrounding economies, maintaining that most of the dollars in the local and Michigan economies can be traced utilizing labor and materials directly from the ground.

Another example of this can be found in TMP’s recent project still under construction, the University of Michigan’s Indoor Practice Facility for Intercollegiate Football in Ann Arbor. By using a hand laid unit masonry building envelope vs. brick embedded precast, we gained a “local” market share of more than 25,000 man-hours and over $1,000,000 in materials directly associated to the facility, which proved to be more cost effective than outsourcing. Andy Greco, PE, and Elizabeth Wong, PE, at Structural Design worked with us to produce a good economical and practical structural design. TMP gave U of M a masonry wall system with an R-value of 21.1 saving energy costs for the life of the building.

This equates to 20 masons/laborers families gaining productive work for one year directly in the local area. Materials and supplies include mortars and cements from local suppliers, Lafarge [Alpena] and St Marys [Detroit] through Spec Mix [Holly/Detroit], local sands [Milford/Ann Arbor], Dow Insulation [Midland], reinforcing steel [Grand Rapids], and Belden Brick [Canton, OH]. Very little of the total dollars [around 5%] went out of Michigan for specialty anchorage and other reinforcing including Wire-Bond [Tennessee]. These are just representative of the raw materials and products of our great producers in Michigan, many of them the envy of the world.

**Masonry Rebate**

Masonry is the economic stimulus that pays back society by actually contributing to, not diminishing, taxes. Paychecks provided to the work force enable more money to be exchanged within the local economy. This means that the money is more liquid. Since there is high liquidity, the exchange of cash will be fast and efficient, meaning a more competitive economy. A fact no economic stimulus check can touch. It is quite remarkable really. Remember, Vitruvius said, “Each nation, in short, has its own way of building according to the materials afforded and the habits of its inhabitants.” We have the abundant resources and the competent inhabitants, a concept he understood well.

The socioeconomic efficiency of the system, however, rests in the fact that cost of materials is low, offsetting labor cost which benefits the economy directly. At this point, most economists and business professionals wince. Labor costs are normally a detriment to be eliminated by automation. Masonry is ultimately and intimately tied to the human element. Using essentially the same tools that have been used for centuries, a mason, with the mason tender’s support, touches every square foot of wall at least seven times. Masonry is a human event that is of simple compilation, yet is so complex that it is impossible for a machine to replicate—OR—to outsource overseas! Every brick laid holds the bricklayer’s fingerprints. Michigan’s masonry force is among the best in the country. With the International Masonry Institute’s [IMI] and dynamic first-of-its-kind-in-the-country training programs, our masons and tenders are "technocrats" kept abreast of the latest in materials, installation and design developments.

Time and time again our contractor’s win national awards. In 2007, for instance, Ed Davenport, Davenport Masonry, was recognized with the prestigious national award of “Industry Leader of the Year.” And our masons are, year-after-year, taking top honors by winning or placing in numerous regional and national competitions. It is imperative we engage this resource that should not really be a surprise to anyone. Remember, Vitruvius said, "Each nation, in short, has it’s own way of building according to the materials afforded and the habits of it’s inhabitants.” We have the abundant resources and the competent inhabitants, a concept he understood well.

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Michigan is particularly situated to benefit from the masonry industry. It’s influence reaches into our local Alpena manufacturing community on a worldwide level with Besser Company, a world supplier of machines that produce unit concrete masonry components of every type since 1904. Associated with the World Center for Concrete Technology on the campus of Alpena Community College literally next door to Besser, research of all types is being...
Currently under construction is University of Michigan’s Indoor Practice Facility for Intercollegiate Football. The over 100,000 sf facility provides a commanding presence as one approaches the University of Michigan’s Athletic Campus from the North along State Street, maintaining the majestic architectural theme set by the imposing lines of Historic Landmark Yost Ice Arena. 365,000 Belden Stadium Blend brick, blended by Belden exclusively for the University of Michigan Athletic Department, were used on Indoor Practice Facility. By choosing hand laid brick rather than brick-embedded precast panels for the building enclosure, local market share for labor and materials increased by 25,000 man-hours and over $1 million to Michigan businesses, while saving significant dollars over outsourcing.

An opportunity exists to engage our research universities at this industry level. New research is needed at almost every level and will enhance the viability and use of existing products and new ones as they are created. With new engineering design programs hot off the press, structural and design engineers will create exciting new uses our imaginations can’t even comprehend today. And new tools will increase productivity like never before as we yield our trowels that are centuries old. Entrepreneurial opportunities abound!

The masonry industry’s economic argument can be displayed analytically using current accepted economic models and formulas to explain the point. For instance, using the Gross Domestic Product formula to model Michigan’s economy, we find:

$$GDP = C + I + G + NX$$

where:

- **GDP** = the market value of all final goods and services in a given period of time. This is to measure how well/poor the economy is doing at a national or Michigan level. We can define GDP as the profitability of the local economy as a result of the masonry industry.
- **C** = Consumption: Spending by households.
- **I** = Investment: Goods bought for making new goods.
- **G** = Government Spending: Public works and infrastructure.
- **NX** = Net exports/imports. This number would be fairly stable since most products are produced and purchased “in state.” However this number has great potential because of resource allocation.

Since the GDP has a direct relationship to each component ($C, I, G, NX$), if any one of these components change, then overall the GDP also changes. So even if only one component is effected positively, Michigan’s overall economy would enjoy that positive change as well.

Since the masonry industry affects not only consumption, but investment as well, the overall effect on the state economy would be quite extraordinary. By simply reallocating shares of the construction industry to the masonry industry, the local effects again would be dramatic and dynamic.

Remember we already maintain a direct cost advantage over other design systems with masonry’s lower cost, efficient design attributes (with the revelation of the RAM Advance software engineering design module for the masonry industry) and labor reinvestment. (See below).

Because more money flows into the market vs. elsewhere, [imported steel/wood/other costs like shipping] more money is left to be circulated and recirculated and on-and-on in the same market. Some models show the same dollar is spent up to five times over with an efficient economic soldier like masonry. It is up to our leadership, both political and design, at every level to engage this treasure. Once exploited, an economy can be transformed. Generally answers are simple and right under our noses. Centuries old industries like masonry may not have the current appeal of BioMed, however if utilized properly, the power of designing, manufacturing and installing locally, employing world class people and materials right here in Michigan’s Indoor Practice Facility for Intercollegiate Football.

Money Multiplier:

- **Multiplier = 1/(1-MPC)**. Multiplier: how much money/demand is created as consumption increases.
- **MPC (Marginal Propensity of Consumption) =** Fractional portion of income for consuming rather than saving.
Michigan can do it. We can leave a legacy to be proud of.

Why hire an out-of-state architect whose design would not possibly engage the understanding of the local means and methods that our local culture understands? When designing a State facility, local designers can help restore Michigan’s economy by proudly using Michigan’s natural resources in signature projects, which are, after all, funded by our tax dollars. Why not use mortar and cements from Michigan’s world-class limestone quarries and building stone available from Halquist Stone’s quarry in the very heart of Michigan’s Upper Peninsula. Michigan NEEDS an answer. We need an industry that is structured, efficient and promotes the local economy. The Masonry industry is ready to be utilized and exported. It is key to the success of Michigan’s future. Michigan is a power to turn our economy.

In 2006, the total restoration and new 24,000 sf addition was completed. Fanning /Howey Associates Architects are masters at keeping the historic flavor facing Main Street and South to the residential neighborhood. Manufactured stone was selected as complement to the facing granite fieldstone church to the East. Insulated masonry cavity wall construction with R-value of 15.2 will ensure that Chelsea’s library will be energy efficient for the 21st Century and well beyond.

McKune Memorial Library, Chelsea

**ARCHITECT/ENGINEER** Fanning/Howey Associates, Novi
**CONSTRUCTION MANAGER** O’Neal Construction, Ann Arbor
**MASON CONTRACTOR** Koch Masonry, Dexter
**MASONRY MATERIALS** Belden Brick Sales, Best Block, Dow CavityMate, Fendt Builders’ Supply, Grace Construction Products, Mortar Net, Quikrete/Spec Mix, St Marys Cement, Wire-Bond

“The same dollar is spent up to five times over with an efficient economic soldier like masonry.”

**Paul E Koch**, president, Koch Masonry, is a fourth generation mason. Koch is a trustee of the board for the Masonry Institute of Michigan, a certified ICC/ICBO Structural Masonry Special Inspector and historic masonry specialist. He has a degree in interdisciplinary studies from the University of the State of New York. 734.424.9316, paulekoch@comcast.net