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In this issue...

9300 Contractor
A quarterly publication of
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Web: *www.tcaainc.org*

Lucinda Noel, Executive Director/Editor

A Message from the President

A Summer to Remember or a Summer to Hopefully Forget?

As the seasons change from a frigid winter, to a cold wet spring, and then finally BOOM - a hot sticky damp Chicago summer, I can feel trouble starting to simmer, and by the time schools let out it's at a full boil. For the last three years, by the fourth of July, or earlier, we contractors can hardly wait for the Fall. You ask why? It's a lack of qualified installers. For approximately four to five months, of each of the last three years, the labor demand has totally outstripped supply.

Being a union tile contractor, serving the Chicagoland market, all labor is from our local union. Just before The Great Recession we had in the neighborhood of 1,400 to 1,500 tile setters and finishers in our market. After the housing crash, and after the dust settled, we were left with around 700 members in our local union. The Union has worked hard to increase their numbers, and when simply looking at just numbers they have done well. They have increased the labor force slowly month after month and now have approximately 1,150 men and women.

The Union's newly revised apprenticeship training program, to put it in a single word, is brilliant. Over the last few years, Gavin Collier and Lupe Ortiz (two of the finest tile setters I have ever known) were tasked with updating, unifying and deploying the training program across North America. As this redevelopment takes root across the country, we will be creating some of the finest craftworkers since the fall of the Roman Empire. We, speaking for all union contractors, now hope that in the very near future the Union will work with us to create a mandatory continuing education program. We, again as contractors, hope to model it after the continuing education programs that the architectural and design communities have used to ensure that their members stay on top of their game.

As I write this, the spring rain continues to fall and by the time this is read our summer will be upon us full-bore. Will it be another nightmare of a summer like the last three? Or will it be a summer packed with projects that can be managed with the labor force that is available. Only time will tell. My sincere hope for all of us is that we will have a great summer, balanced with plenty of work and plenty of family time. As my father has always told me "work hard and play harder".

Brad Trostrud
Trostrud Mosaic & Tile Co., Inc.
TCAA President 2018-19

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Preview

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Dean Minuto
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- Future of Distribution in the Tile Industry, NAW Fellow Panel/ Presentation
- Changing Your Company's Mindset to Recruit, Train, Retain Future Tile Setters
- How to Create a Bullet Proof Spec
- Jobsite Productivity: How to Get the Most Productivity from your Crews & Best Practices Using Current Technology
- *and many more breakouts!*

Additionally, there are many opportunities for discussions at roundtables and forums throughout the conference.

Ceramic Tile Installation by T.H. Winston Company, Inc. of Cincinnati, OH

Transforming Renovation at the University of Cincinnati - Fifth Third Arena

The $87 million privately funded Fifth Third Arena renovation transformed the home of the Cincinnati Bearcats, in Cincinnati, OH, into one of the finest on-campus facilities in the nation. The total renovation of the thirty-year-old arena began in 2017 and was completed near the end of 2018.

Fans had a very positive reaction to the changes, and the 2018-19 men's basketball season tickets sold out for the Bearcats return to Fifth Third Arena after the 20-month renovation. The existing seating layout was transformed into a modern 360° seating bowl for approximately 11,500 spectators with new concessions and restrooms, a new upper-level concourse with its own fan amenities, expanded food and beverage options, along with a new main entrance and plaza with centralized ticketing and guest services. New premium seating options include a courtside club, arena club and concourse club as well as enclosed suites, loge seating, a new Bearcats Lounge and super suites. The men's and women's basketball locker rooms were also renovated.

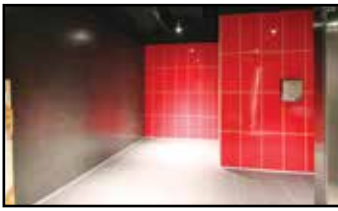
The T.H. Winston Company was selected to perform the ceramic tile installation within the 220,000-SF multi-purpose arena. Nick Rusche, President of T.H. Winston, advised that the renovation included approximately 20,300 SF of ceramic

tile. To fulfill the project requirements Rusche had to purchase 25 different types of tile from multiple manufacturers and distributors. Rusche advised that the highlight of the installation was the custom waterjet “C-Paw” mosaic murals used in the locker rooms and the hydrotherapy room, which added a special touch to these areas.

A thick-set mortar bed setting method, which is particularly labor intensive, was specified and implemented throughout the locker rooms, and the tile work in the remainder of the arena was installed in accordance with a TCNA thin set method of installation. Rusche reported that one of the major challenges was the tight schedule which required T.H. Winston Company to have multiple crews working in different areas throughout the arena simultaneously. However, T.H. Winston was up for the challenge and successfully completed the project on time.

Project Info

- General Contractor: Skanska USA and Megen Construction (Joint Venture)
- Architect: Populous
- LEED Silver Certification in progress
- Tile Contractor: T.H. Winston Company, Inc.



About the T.H. Winston Company

The T. H. Winston Company, established in 1894, is a Cincinnati, OH based tile and stone contractor. For more information about T.H. Winston Company contact Nick Rusche at (513) 271-2123 or nick.rusche@thwinston.com

In addition, T. H. Winston is a member of TCAA (Tile Contractors’ Association of America), and is certified as a TCAA Trowel of Excellence™ contractor. The Trowel of Excellence™ certification is recognized in MasterSpec and the TCNA (Tile Council of North America) Handbook. For more information regarding TCAA membership and/or the Trowel of Excellence contractor certification please visit www.tcaainc.org.

TCAA Labor Report

John Trendell, TCAA Labor Committee Chair
Trendell Consulting LLC

DEFINING THE CONVERSATION
What's in a Word or a Phrase?

LVT or PBM?
100% Waterproof or Warranty Exclusions?
Aluminum or Military Grade Aluminum?

I recently attended a Tile Council of North America (TCNA) marketing committee meeting. What an eye opener! Over 40 participants representing tile and setting manufacturers, distributors, and contractors were present. Being a contractor and having an engineering background I see things as pretty black and white. This group really opened my eyes as to how seeing things through the eyes of architects, designers, and the public might be quite different because of how an idea is communicated.

I have 3 examples in the above heading to show how ideas can be expressed in ways that might shed a completely different light on them. Let's take the last one first. A certain car manufacturer recently changed their truck body materials to include aluminum. Now, for me, I thought instantly of aluminum foil. But, describe aluminum as military grade and all of a sudden, I was thinking of a tank!

In our industry one of the newest flooring materials is luxury vinyl tile or LVT. The word luxury adds a real flair to the material. But, again, changing the conversation to what the material really is, plastic based material or PBM describes a lot more accurately what the flooring actually is.

Now for the real kicker. In our industry when we say an installation is 100% waterproof we are talking about the ceramic tile system as a whole. When a PBM manufacturer says their flooring is 100% waterproof, it's not! The warranty exclusions specifically state only the plastic planks are waterproof not the flooring system itself. All PBM flooring installations leak!

Luckily for our industry we have a recognized organization, TCNA, that is an honest broker. They are testing our products constantly and establishing standards that have to be proven before ever being considered by an industry wide committee of 60 professionals to be included in the TCNA Handbook.

We all must define the conversation regarding what is a proper flooring and what is a proper installation. Thank you TCNA for your ongoing work to make our industry the best it can be!

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TECHNICAL CORNER: Critical Points of Tile Design and Installation

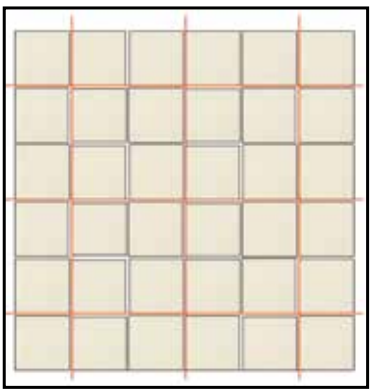
Grout Joint Alignment vs. Grout Joint Uniformity

a series by Scott Conwell, FAIA, FCSI, International Masonry Institute

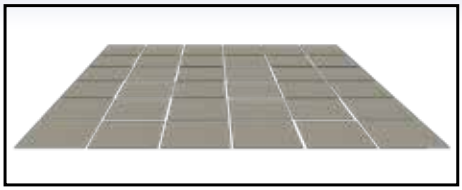
"Using tile spacers when laying out floor tile will make your grout joints nice and straight… right?" Unfortunately, this belief is commonly held by building owners, homeowners, and even some design professionals, but it is incorrect. As experienced BAC tile installers know, spacers are more likely to hurt the installation than to help it.

How can spacers, which virtually guarantee grout joint uniformity, i.e. grout joints all the same width, be a bad thing? It has to do with the allowable dimensional variation in the size of the tiles and the inconsistency of the wall dimensions across a room. If the individual tiles were all the same size, and if the corners of the room were perfectly square, then spacers might be useful. However, we know that tile sizes vary and room corners are often out of square, so good installers rely on being able to make slight adjustments to the grout joint width in order to maintain grout joint alignment.

Spacers keep the grout joints consistent in width, but the joints become misaligned due to variations in tile size.



Using a multi-unit grid keeps grout joints aligned, but the joints' widths vary due to variations in tile size.



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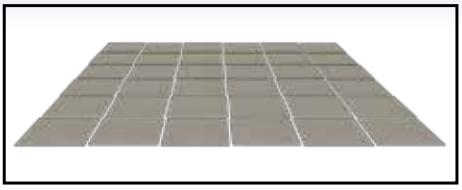


Using a multi-unit grid keeps grout joints aligned, but the joints' widths vary due to variations in tile size.

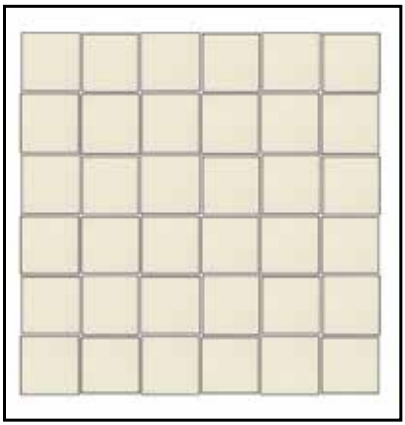
According to Table 10 in ANSI A137.1, a calibrated porcelain tile is allowed to vary in its facial dimension by as much as ±0.08 inches, equating to a total variation by as much as 0.16 inches. In other words, tiles could vary in size by over 1/8 inch! Similarly, the wall-to-wall dimension could vary drastically when taken from opposite ends of the room. If spacers are used, the grout joints might have a uniform width, but they simply won't line up, and the installation will look terrible.

To accommodate the imperfections in the tile and the imperfections in the backing walls, skilled tile installers are trained to lay out a floor by snapping a grid of chalk lines that will dictate where grout joints will fall. For example, if the tile size is 12" x 12" nominal, a tile setter may snap lines every four feet in each direction, lining up a corner of the tile on the intersecting grid lines every four feet. Then the installer would lay tile inside the grid with grout joints that are more or less uniformly spaced. This will ensure that the joints line up every four feet, and within each four-foot section of floor, there is uniformity. When the tiled floor is viewed in its entirety, all the joints won't be uniform, but they will be aligned, which is the more important visual consideration.

To the larger issue of layout, the tile setter snaps the grid on the floor in the precise position to eliminate or minimize cut tiles, and it is generally parallel to the longest or most prominent wall in the room. The grid is kept square using the largest possible Pythagorean triple for the size of the room. For example, the installer would snap a right triangle of 8 ft., 15 ft., and 17 ft. or a right triangle of 5 ft., 12 ft., and 13 ft. In smaller rooms the triangle may be 3 ft., 4 ft., and 5 ft.

Now that we've demonstrated the need for variable grout joint width to maintain proper grout joint alignment, let's examine what the ANSI standards say about allowable variation in grout joint width. ANSI A108.02 states, "To accommodate the range in facial dimensions of the tile supplied for a specific project, the actual grout joint size may, of necessity, vary from the grout joint size specified." This language is intentionally vague, as it does not give a specific value for allowable variation. In recent years, it has been proposed to the ANSI A108 committee that we allow a variation of ±25% of specified width, meaning if the grout joint is specified to be 1/8 in. wide, the actual grout joint could be 1/32 in. narrower than 1/8 in., or it could be 1/32 in. wider than 1/8 in. In other words, a 1/8 in. grout joint could range from 3/32 in. to 5/32 in. To date the ANSI committee has not voted on this language, so right now it's nothing more than a suggestion.

In conclusion, imperfect site conditions and manufacturing limitations of tile are two factors that require tile installers to make slight adjustments which spacers would otherwise preclude, in order to maintain alignment of grout joints. BAC tile contractors and installers have the training and expertise to grid a floor, lay out the pattern, and provide an installation that looks great even under less than ideal jobsite conditions.



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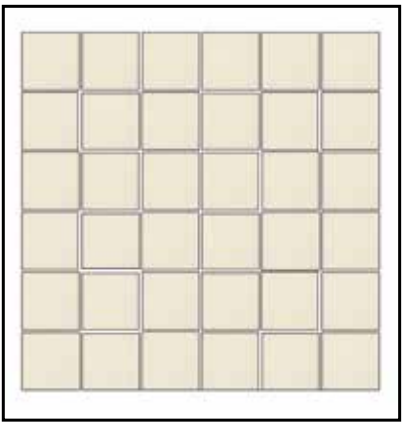

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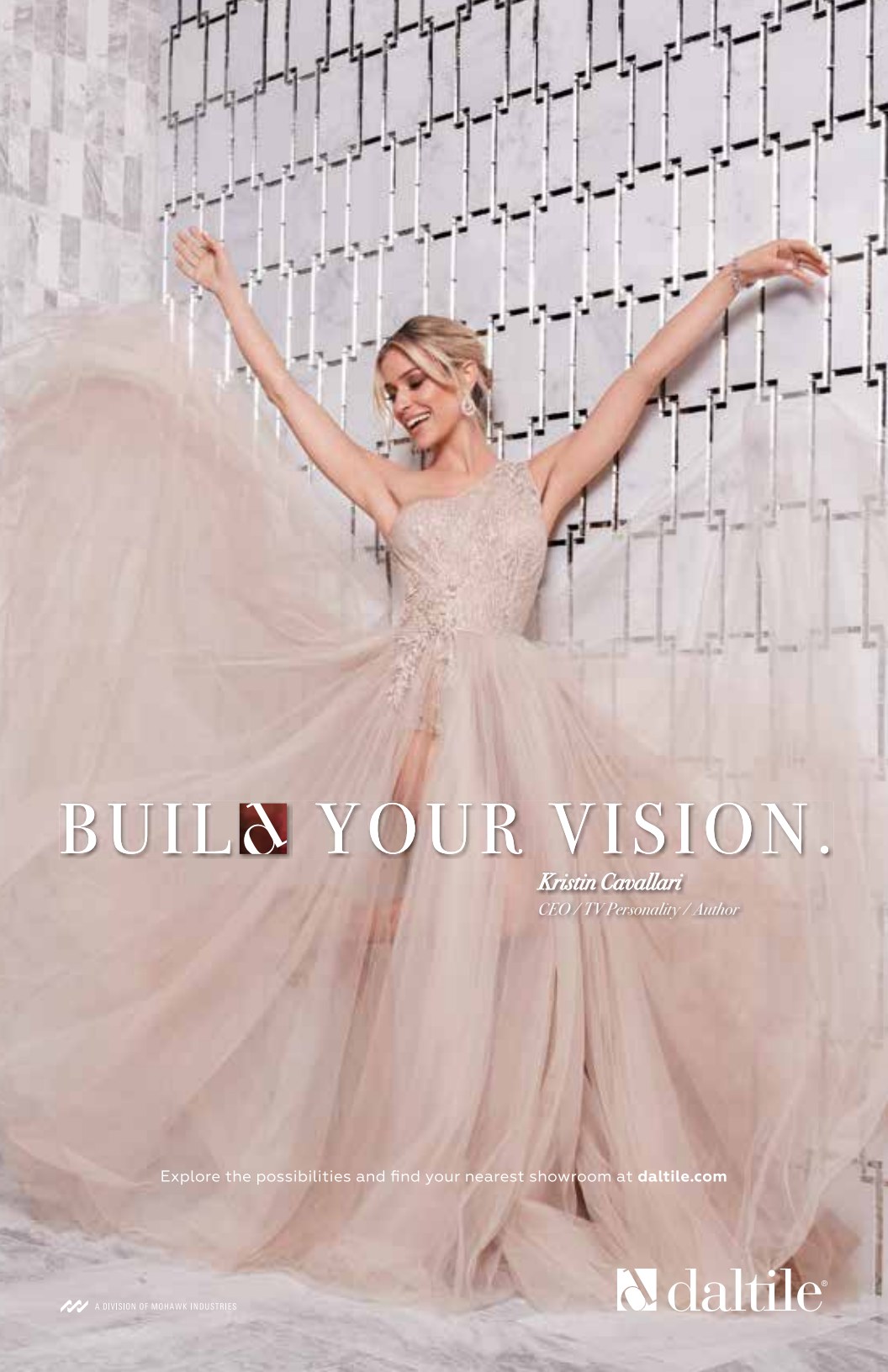
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150,000 SF Ceramic Tile Installation @ New Milwaukee Bucks Arena

by Grazzini Brothers & Company - On Time - Within Budget - Despite Challenges

Grazzini Brothers & Company, was selected by M. A. Mortenson Company, to perform the ceramic tile work at the new Milwaukee Bucks/Fiserv Forum Arena, in Milwaukee, Wisconsin. The Fiserv Forum is home to the Milwaukee Bucks and Marquette Golden Eagles, and will host a wide variety of other events. The 730,000 square foot multi-purpose arena seats 17,500 fans with 10,000 seats in the lower bowl, 6,000 in the upper deck and the rest in a ring of suites throughout the building.

This new $524 Million Arena features a swooping roof and extensive glass to evoke Wisconsin's natural beauty and Milwaukee's rich heritage of industry and craftsmen. The eye-catching facade features an immense wall of glass that, for those outside its barrier, will reveal the activity going on inside the arena. The building's most striking feature is its arched roof, which is clad in zinc panels, overlaps the glass facade, and stretches down to street level on the North side. This sloping section is punctuated with vertical, multi-storied glass, which includes ceramic frit patterns.

Milwaukee's world-class arena received an A+ rating and is the first sports and entertainment venue in Wisconsin to earn LEED Silver Certification. Architects were: Populous (lead), Eppstein Uhen Architects (based in Wisconsin), and HNTB (based in Wisconsin).

Grazzini Brothers & Company installed approximately 150,000 SF of ceramic floor and wall in areas throughout all six levels of the arena. Grazzini's project manager, Mark Miranda, was responsible for overseeing the project. The tiled areas include kitchens, 18 men's restrooms, 22 women's restrooms, 14 gender-neutral restrooms, showers, locker rooms, 34 suites, clubs, bars, corridors, and concessions. This complex project involved 35 tile types in multiple colors and sizes, from 22 different manufacturers, purchased from 13 different suppliers. The tiles were installed utilizing TCNA (Tile Council of North America) Handbook setting methods F113, F122, F112, W211 and W244.

There were numerous challenges; most notably the construction schedule and the RPP (Residents Preference Program) work force utilization. This was unique in that 40% of the workforce had to meet the RPP requirements. The RPP preference required Grazzini to hire people who worked less than 1,000 working hours in the previous year or had been out of work for the last two weeks prior to starting. Tile setters meeting one of these requirements within the city limits were scarce. To meet this requirement, Grazzini Brothers & Company had to continually train and supervise people who were new to the tile trade. Having a very tight schedule and 40% of our workforce with little to no experience in the tile trade made it very challenging to meet quality standards and scheduled dates. To overcome this challenge, Grazzini enlisted their best forewoman with the skill and ability to monitor and train the new hires and employed a full-time quality control manager whose job was to walk the project all day to identify quality issues and correct any deficiencies. Despite the challenges, the project was completed on time, within budget, and quality was never compromised.

About Grazzini Brothers & Company

Grazzini Brothers & Company is a nationwide specialty contractor out of St. Paul, Minnesota. Since 1923, Grazzini Brothers has provided a full range of tile, terrazzo, stone, and soft flooring installation services. Grazzini has the financial security, bonding capacity, and credit experience to undertake any size project throughout the country. For additional information about Grazzini Brothers & Company you may contact Monique Navarrette @ 651-994-4148, mnavarrette@grazzini.com.

Grazzini Brothers & Company is a longstanding member of TCAA (Tile Contractors' Association of America) and is certified as a TCAA Trowel of Excellence™ contractor. The Trowel of Excellence™ certification is recognized in MasterSpec and the TCNA (Tile Council of North America) Handbook. For more information regarding TCAA membership and the Trowel of Excellence contractor certification please visit www.tcaainc.org.

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Evolving Specifications

By David Stutzman, FCSI, CCS, AIA

What is needed for a successful tile installation? Accurate and complete information about the project requirements. Who provides the necessary information - the owner, the designer, the specifier, the contractor, the tile contractor? In practice, it is all of the above. Each project participant contributes expertise to help produce an appropriate result. The installation must be technically correct and meet the desired appearance, performance, and quality required by the specifications. Usually tile subcontractors must make do with whatever specifications they are handed including those that are obviously cobbled together at the end of the project. There is little opportunity for subcontractors to participate during the specifications development.

Owners conceive construction projects based on a business need and then develop the owner's project requirements (OPR) to define their needs. After some initial feasibility investigations, the owner will select the designer, and perhaps the contractor. Without knowing the owner's expectations, there is little hope those expectations will be met for both design and construction.

Drawings identify the relationships and quantitative aspects of the project—everything that can be counted and measured—requiring the tile contractor's estimating skill. Specifications include administrative procedures and the qualitative aspects of the project – product requirements, installation, location, and performance results – all of which require the tile contractor's installation care. Combining the contractor, subcontractor, and specifier's time, care, and skill will give owners a new confidence that the OPR will be met.

Traditional construction specifications are little help for subcontractors to understand what must be built. The specifications, following the Construction Specifications Institute's (CSI) SectionFormat[i] begin with **1.1 SUMMARY** followed by **A. Section Includes** and a list of products specified in the section: Ceramic tile, Porcelain tile, Mortar, Grout, Waterproofing.

The section may be specifying tile floor and wall finishes for a bathroom shower, outdoor terrace pavers, a kitchen countertop, or virtually anything. The product list is simply a list without any hint of how the products are used and where they may be installed. The design team, including the specifier has not imparted any knowledge of the project to the tile contractor to improve understanding of the project requirements.

When starting construction specifications such as this, the specifier needs detailed product selections. What tile, grout, and installation methods will be used? Often the design team is not ready to answer those questions before 50% Construction Documents phase. Yet the specification must be produced for a Guaranteed Maximum Price document issue during Design Development phase — well before final decisions are made.

Using an alternative approach, rather than traditional design approaches, can provide a solution to manage and record design decisions as they occur. Validate decisions against the OPR and obtain the owner's informed consent for important decisions affecting quality, performance, and cost.

Let's explore a project checklist as an aid for discussion and decision making. UNIFORMAT II[ii] is an hierarchical organization arranged by building systems- generally from bottom, up and outside, in. Originally conceived by estimators, the format allows cost analysis of alternative systems during early design stages. It also helps to manage project costs, comparatively, to help manage design decisions to keep projects within the owner's budget. UNIFORMAT II includes seven basic building elements. Tile systems are included in Element

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B (SHELL) for exterior building applications, Element C (INTERIORS) for interior finishes, and Element G (SITE) for site improvements.

At the start of the project, designers are normally able to confirm with certainty that a building will have interior wall, floor, and ceiling finishes. They may not know what those finishes will be, but these finishes will exist. Because UNIFORMAT II is hierarchical, designers can easily make high level choices about the project, even before design begins.

UNIFORMAT II as a Checklist		
Level 1	Level 2	Level 3
☒ C Interiors	☒ C30 Interior Finishes	☒ C3010 Wall Finishes ☒ C3020 Floor Finishes ☒ C3030 Ceiling Finishes

After the basic elements are decided, attention can turn to establishing performance and design criteria that will guide the ultimate system and material selections. Not all of these must be answered at the same time. Identify the most critical first, those that affect quality and cost of the installation and those that are necessary to analyze one system compared to another so the optimal solution may be selected.

Performance Criteria	Design Criteria
Slip Resistance: 0.42 DCOF, minimum	Mockup: In situ, temporary
Water Resistance: No leaks, 2" water, minimum	Tile Format: Large, standard, mosaic
Stain Resistance: No effect from foods	Pattern: 1/2, 1/3 running, stack, custom
Substrate Level: 1/8 inch in 10 ft maximum	Joint Size: 1/2, 3/8, 3/16 inch
	Transitions: Stone thresholds, metal edging

Apply the checklist and the criteria to describe the project requirements in a structured, organized way. Use the Level 4 titles to think about what the project may include. Revise and create new titles when necessary to suit the particular project conditions to extend the checklist to Level 4.

UNIFORMAT II as a Checklist	
Level 3	Level 4
☒ C3020 Floor Finishes	☒ Tile, terrazzo, wood, and resilient flooring ☐ Other flooring and floor finishes

Write a simple, single-sentence description of each Level 4 element to indicate WHAT principal product is required, HOW the product is installed, and WHERE generally the product is installed. Think about what the contractor's estimator needs to engage subcontractors and to begin pricing the project.

C30	**INTERIOR FINISHES**	
C3010	**WALL FINISHES**	
C3020	**FLOOR FINISHES**	
C3020.21	TILE SHOWER FLOORS	
	Description	Ceramic tile thin set on waterproof manufactured sloped shower base installed on plywood subfloor.

CSI publishes *PPDFormat* that explains and gives examples of the organization and the method of documenting project information. The system is progressive, following the same order as the design and the building information model (BIM). In fact, the project description can follow the same plan as the BIM execution plan for developing the project element description details. Say what you know when you know it.

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As the design progresses and decisions are made, record the detail of each decision. Identify the components (principal products) that make up each building system and the MasterFormat construction specification section where each component will be specified. Connecting UNIFORMAT II to MasterFormat minimizes information gaps by ensuring each system and product is accounted for in both organizational systems.

C3020.21	TILE SHOWER FLOORS	
	Description	Ceramic tile thin set on waterproof manufactured sloped shower base installed on plywood subfloor.
	Performance Criteria	
	Slip Resistance	0.42 DCOF, minimum
	Design Criteria	
	Pattern	Custom, hand set
	Components	
093000	Ceramic Tile	Mosaic format
093000	Grout	High performance polymer modified portland cement
093000	Bonding Mortar	Polymer modified portland cement
079200	Joint Sealant	Polyurethane

Improving Construction Specifications:
Commercial master specifications systems has become a method of editing. This approach marginalizes thinking and professional judgement required to craft accurate project specifications. It often results in specifications that have extraneous or irrelevant requirements because the purpose for the specification is not fully defined when the specification is started. Therefore, the tendency will be, when in doubt, to retain text just in case it may be needed.

Consider what the general contractor and the tile contractor may know about the project if the specification began with text coming directly from the UNIFORMAT II description. The work results are the project element descriptions. The principal products are the system components. With this approach, the contractors will have an instant understanding of what must be built and what products are required and there is immediate improvement in clarity of the specification.

Now, the specifier has a roadmap for writing the specification. The work results (what must be built) are clearly defined and will guide the specification content development. New content will be required if the product list does not include manufactured shower bases. The general contractor can more easily parse the total work to the appropriate trade contractors. The work results become line items for developing the contractor's overall estimate and schedule.

The tile contractor has a mental picture of what is required before diving into the specifications and drawings. He is armed with information about the context and the expected results to improve his understanding of the project requirements.

Evolving Specifications:
Take the existing systems, combine them in a single platform and invite the entire team including the owner, designer, contractor, and tile installer to participate in project documentation throughout the process. It's a new approach - Evolving Specifications. It's transparent, allowing all stakeholders to participate. It's a methodology to leverage the power of existing systems to describe construction projects differently to enable better understanding, to manage design decisions, and to improve outcomes for owners.

Employ the approach beginning at conceptualization and extending through commissioning, operations, and maintenance. Write project descriptions to record owner's project

Schluter®-KERDI-DRAIN-H

Horizontal Drain Outlet Makes Relocating Showers Easier

Relocating a drain for a shower can be extremely challenging and potentially expensive in many remodeling and renovation situations. Residential environments that present these challenges include slab-on-grade construction, basements, high-rise condominiums, apartments and even many wood frame homes where multiple trades would be required to relocate an existing drain. Commercially, any building with suspended concrete, post-tension concrete or old, vertical chases can present major challenges as re-coring concrete is a costly operation. To overcome these challenges Schluter Systems has developed the Schluter®-KERDI-DRAIN-H with a 2" horizontal outlet.

The horizontal outlet allows the drain to be connected to an existing drain pipe and P-trap away from the new drain location. Connecting to existing plumbing from a new drain location can significantly reduce demolition work, mess, and the cost of the project. In situations where there is no access to the space below the floor, the horizontal drain outlet can bring an otherwise impossible project into the realm of possibility.

KERDI-DRAIN-H is identical in every way to existing Schluter 2" drains with the exception that the outlet is horizontal instead of vertical. The drain includes the integrated bonding flange and is part of the complete Schluter shower system for constructing waterproof tiled showers. It is available in both PVC and ABS.

To facilitate installation of the drain, Schluter has also developed the Schluter®-KERDI-SHOWER-CB compensation board. Made of lightweight expanded polystyrene, the board is installed on the floor to accommodate the drain body and waste pipe height requirements. Using the boards is a time and cost-effective alternative to pouring concrete. The compensation board can be easily cut to size to fit the required space and to fit around the drain and waste pipe. Multiple boards can be installed to custom fit the specific size and shape of the shower. A Schluter prefabricated shower tray can then be installed on top of the compensation board.

About Schluter®-Systems

Schluter®-Systems products are specifically designed for the tile industry to ensure that installations maintain integrity and durability. The company's product line includes over 4,000 items, including tile trims, uncoupling membranes, waterproof building panels, shower systems, and thin-set mortar. Schluter-Systems is renowned for its state-of-the-art technology with attention to detail for highly functional and visually appealing results. For more information, visit www.schluter.com.

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requirements, performance and design criteria, system descriptions using UNIFORMAT II. Connect the descriptions to MasterFormat construction specifications required to build the project. Name the combined set of documents as the specifications as defined by the construction contract to ensure no information gaps exist for the contractor and installers.

The Improvements obtained from this approach is the owner obtains a complete reliable record of the design and construction via a transparent process that includes valuable information that is not available from construction specifications, alone. It enables the owners to: monitor design progress and design decisions as they occur to ensure they are timely and in an appropriate order, avoiding last minute design changes; make informed decisions about system selections and the value of design alternatives; validate the design against recorded owner project requirements to ensure expectations will be met.

The design team obtains active assistance from the owner and contractor teams throughout the design process to aid in making design decisions. They can; gain proactive cost analysis during early design phases for systems evaluations; receive constructability and schedule impact analysis to guide design decisions; rely on design decisions confirmed before documenting the design; complete the construction documents accurately, the first time, minimizing missed coordination and need for addenda.

The contractor team is involved in the project earlier, at a point where input can be valuable without being disruptive. They can: pose questions and proactively resolve issues as design progresses, boosting confidence in the documents and eliminating RFIs during construction; advise on alternative system costs, constructability, and schedule to account for local labor and material availability; offer alternative solutions to solve design problems to minimize construction risks

The Solution Exists:
Conspectus developed the Evolving Specifications approach and created ConspectusCloud the new web-based specifications writing system to effectively implement the approach. We rely on existing systems - without disruption to existing industry processes. We put these systems together in a new way that eliminates information gaps by utilizing UNIFORMAT II to document the project requirements, continuously, throughout the entire design and construction process. And, finally we plug MasterFormat construction specifications in when it is time to get something built. All stakeholders can watch the specification documents develop and actively participate by offering comments, and with the right permissions even making edits.

Conspectus Project Approach
Read more about the Conspectus Approach at **https://www.conspectusinc.com/.**
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[i] "SectionFormat Structure," in SectionFormat™ / PageFormat™ The Recommended Format for Construction Specifications Sections (The Construction Specifications Institute Construction Specifications Canada, 2008) This format prescribes the standard arrangement known as the 3-Part format using Part 1 – General, Part 2 – Products, and Part 3 – Execution. The format also includes standard article titles within each part for a consistent order of information within each specification.

[ii] Standard Classification for Building Elements and Related Sitework—UNIFORMAT II (ASTM International, ASTM E1557, 2009 Reapproved 2015). The original UNIFORMAT was developed jointly by the General Services Administration (GSA) and the American Institute of Architects (AIA) in 1972 for estimating and design cost analysis. UNIFORMAT II was first published in 1993 and enhanced the original, especially for the mechanical, electrical, plumbing, and fire protection elements. See http://www.uniformat.com for document background and application discussion.

See **http://www.masterformat.com**. CSI membership or a recent purchase of MasterFormat is required for access.

David Stutzman has over 40 years of experience in the AEC industry. He founded Conspectus, Inc. in 1992 and has been providing industry-leading specs world-wide since then.

American Encaustic tiles. Meredith House in Richmond Virginia c. 1900.

Trent tiles designed by William Gallimore in St. Paul Minnesota c. 1889. Photo courtesy John Vanco.

History of Tile

Enhancing the Era of Ornament

As the United States emerged from the destructive and divisive Civil War, those who had the means to afford their own home looked to England for exemplary ways to decorate their interior spaces. A Victorian era residence during the latter half of the 19th century tended to be cluttered with decorative elements from furniture and draperies to endless ornamental frills and knickknacks adorning every conceivable surface. And among the most noticeable surface in the home was the surround of the fireplace mantel, often the central focus of the parlor, dining area and most other rooms as well, the perfect place for the embossed tiles that had become commonplace across the Atlantic.

Just how pervasive were these embossed tiles in the U.S.? Prior to the Centennial Exposition in 1876 there was only one pottery making them: the Chelsea Keramic Art Works , which was established 10 years earlier in Massachusetts. Ten years later, by the mid-1880s, there were an additional ten tile works in just six of the eastern states offering these decoratives, made specially for fireplace facades. Their heyday? 1885-1895.

Among the most prolific operations were the American Encaustic Tiling Company (AET) in Zanesville, Ohio, and the Trent Tile Company in Trenton, New Jersey,

each with their master modelers. As chronicled by the late Norman Karlson in his *Encyclopedia of American Art Tiles*, AET introduced embossed tiles in 1881, hiring German-born Herman Mueller in 1887, a well-trained sculptor, who during his six years with the company produced models for single tiles as large as 6" x 30" portraying minimally clothed ladies paired with classically attired gentlemen for each side of the fireplace opening. 6" x 18" accompanying horizontal decoratives were produced for above the opening. Handsomely illustrated catalogues promoted the ware that was made available to the public in showrooms in major cities throughout the country.

Trent Tile hired modeler Isaac Broome in 1883, a Canadian who had established his qualifications at a local pottery in Trenton. In three short years Broome sculpted hundreds of relief tiles that would serve this company for many years. His successor, William Gallimore, an Englishman with 30 years of modeling experience in England and the States, continued the design traditions that Broome had established for the company.

Similar to the American Encaustic offerings of the period, Trent tiles often reflected classical themes dating back to Roman times where young women and men

Trent tiles in the dining room. Morey Mansion in Redlands California c. 1890.

American Encaustic tiles in an upstairs bedroom. Younger House in Richmond Virginia c. 1891.

American Encaustic tiles in the entry hall. Younger House in Richmond Virginia c. 1891.

Beaver Falls Art Tile in the parlor. Manresa Castle in Port Townsend Washington c. 1892.

led lives of leisure, raising their children in opulent settings or to the Renaissance judging from the costumes. Also there were pastoral scenes featuring shepherds tending their flocks, lovely ladies picking flowers or harvesting fruit, frolicking young children chasing butterflies, nature and its bounty, all romanticized visions of preindustrial times when life was simpler, seemingly without stress. What could be more inviting? Just sit back and enjoy the sublime intervention.

Joseph A. Taylor
President, Tile Heritage Foundation
Cesery Award recipient in 2003

www.tileheritage.org

Unless otherwise noted, all photos courtesy Tile Heritage Digital Library
(Special treat: Tom Raley, AIA, FLAD Architects in Madison, Wisconsin will be receiving Richard Pennington's book on Low Art Tile. Thanks Tom [and others] for responding!)

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