

CONCRETE AND TILES-I: MOYER, MERCER, MUROSA

Michael Padwee

In the early twentieth century concrete and reinforced concrete began to be used by architects to build residences as well as factories and skyscrapers. Concrete was also used to decorate the interiors of residences. In some instances art tiles were used to ornament both exterior and interior concrete surfaces, where appropriate. In 1907 one architectural critic wrote, "A well-constructed reinforced-concrete structure, appropriately decorated with exterior-ceramic work, can be made quite as artistic and decorative as the most elaborate stone or marble building. ...Ceramic work can be made alive, bright, cheerful and gay looking... . As the tile decoration is of an eminently permanent character there is, of course, considerable responsibility entailed in the application of ceramic embellishment to the outside of buildings... ." (C.J. Fox, Ph.D., "Ceramic Decoration and its Relation to Reinforced Concrete Construction", *Brick*, Vol. XXVII, No. 2, August 1907, p. 50)



(From "Eight Years of Nature's Work on Concrete House in South Orange, N.J.", *Concrete*, Vol. 8, No. 1, January 1916, p. 7)

The Historic Albert Moyer House

This "appropriate" decoration can be seen in the Albert Moyer house, a monolithic* concrete structure built in 1907. *["monolithic concrete is a concrete structure which is cast as a single, continuous volume of concrete, without control joints or keys"

(http://www.homewyse.com/definitions/monolithic_concrete.html)]

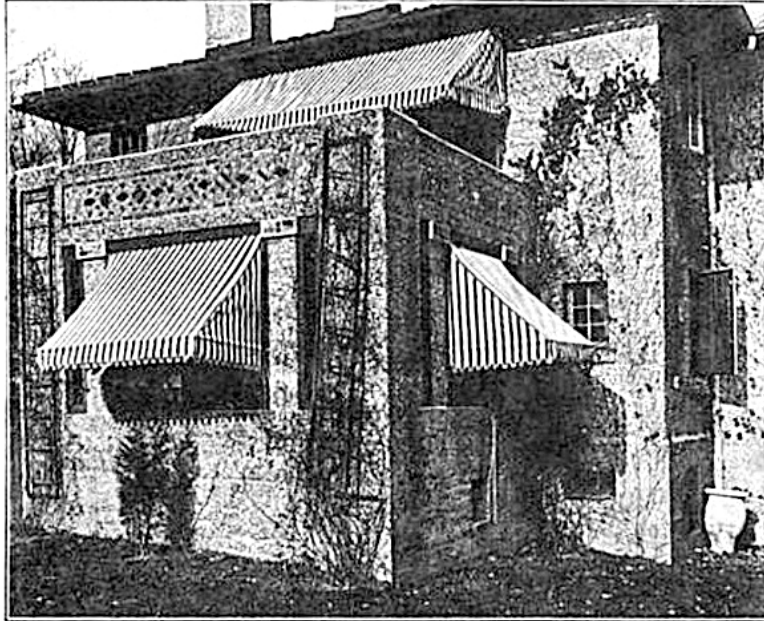


Fig. 35.—Porch Detail, Residence of Albert Moyer, South Orange, N. J.

(C.W. Boynton and J.H. Libberton, "The Decorative Possibilities of Concrete", *Journal of the Western Society of Engineers*, Vol. XVIII, No. 8, Oct. 1913, p. 743)

Moyer, an executive of the Vulcanite Portland Cement Company, wrote of his house: "In using concrete for country residences [...the reader should] eliminate from his mind all thought of concrete such as he sees about him in retaining walls, bridge abutments and other work where concrete has been employed, but to try to picture a concrete made of selected materials, the moulds or forms taken off as soon as possible while the concrete is yet green, the surface scrubbed with a...brush, water...sprayed on with a hose... exposing the larger pieces of aggregates; in fact, throwing them slightly in relief, giving a rough surface of accidentally distributed different colored stones." Proper treatment in construction "gives a wall which is 100 years old on the start and which will age beautifully. ...Instead of plastering the surface with mortar as is the usual method..., all the mortar is removed from the surface exposing to view honest concrete." (Albert Moyer, "How and Why I Built My House of Concrete", *Real Estate Record and Builders' Guide*, Vol. 81, No. 2088, March 21, 1908, p. 487)



The Moyer residence as it looks in 2012 (photo courtesy of Michael Padwee). The Moravian tiles still ornament the concrete structure.

Mr. Moyer's residence, built in 1907 in South Orange, NJ is one example of a still-existing concrete house that used tiles as both exterior and interior artistic decoration. "Liberal use has been made of exposed aggregates, employing a mixture of Portland cement with limestone screenings, marble chips, and dark trap rock... . Not stopping there, much dependence has been placed upon Moravian Pottery decoration, which harmonizes well with the concrete surface, as is shown in the fireplace, with its inlaid panel showing an Indian at a fire... . The balcony [of the porch], also, has been worked out in pottery but somewhat differently than the fireplace. ...instead of being inlaid, the figure comes out in bas-relief and although somewhat serpentine in design, seems fairly consistent with the grape-vine motive." (C.W. Boynton and J.H. Libberton, "The Decorative Possibilities of Concrete", *Journal of the Western Society of Engineers*, Vol. XVIII, No. 8, Oct. 1913, p. 743)



This side of the Moyer house faces the street. The concrete aggregate is broken up by the brightly colored Moravian tile mosaic panels which are above the balcony decorated with Moravian brocade tiles.



(Photos courtesy of Michael Padwee)

The Portland Cement Company published a book, **Concrete Surfaces**, which uses the Moyer sun room/South porch fireplace in a discussion of clay tile ornamentation of concrete surfaces:



Sun room, East wall exterior detail. (Photo courtesy of Whit Waterbury)

“...very effective results can be obtained by embedding colored clay tile or mosaics in concrete surfaces in such a manner as to form patterns and designs. Any one or a combination of different methods can be used in placing the tile. By arranging them in position on a pallet and depositing a cement mortar or concrete around the tile a thin concrete slab...can be cast and...inserted in a space...left in the concrete surface. The tile can also be placed against the forms and the concrete placed directly back of them. ...Still another method is to set the tile, piece by piece, in recesses...left in the surface of the wall. ...A good example of decoration by inlaid tile is...[the fireplace in the Moyer house].” (**Concrete Surfaces**, Third Edition, Universal Portland Cement Company, Chicago-Pittsburgh, 1913, pp. 25, 26)



Fireplace on south porch,
Mr. Albert Moyer's
Residence.

Surface Decoration with
Colored Clays.
Special Facing.

30

(Concrete Surfaces, p. 30)



Sun room/South porch fireplace, 2013. (All photos of the Moyer House were taken by Whit Waterbury, unless otherwise noted, and are © by him with all rights reserved)



One of six column crowns in the sun room.

The house was designed by the architectural firm of Tracy & Swartwout of New York City. The tiles used were hand-made tiles from the Moravian Pottery of Doylestown, Pennsylvania, designed by Henry Mercer. Besides founding the Moravian Pottery, Mercer experimented with architectural and decorative concrete, and he made concrete garden ornaments, some of which still survive at the Moyer house at the front entrance.

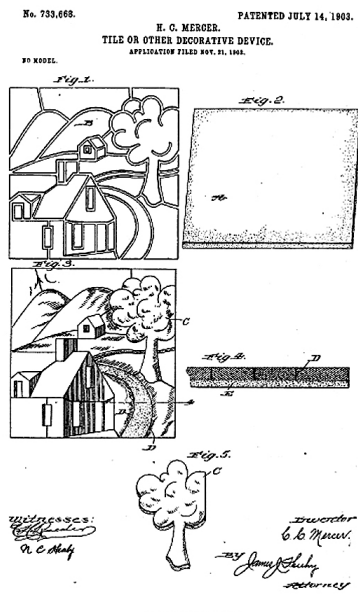


Two of three original 1906 garden ornaments. (Photo courtesy of Michael Padwee)



A third, original garden ornament. (Photo courtesy of Whit Waterbury)

The tiles used in the Moyer house were a direct result of Mercer's 1903 mosaic tile patent. According to the patent, Mercer created either a pictorial, geometric or other design on a slab of clay; then cut the design into sections; dried and colored or glazed the clay pieces; fired them and then pieced them together using a binder material--his favorite being cement. (From patent number 733,668 description)



Two other concrete and tile garden ornaments were part of the original Moyer house design. One “was made by...Albert Moyer, of the Vulcanite Portland Cement Company, at the farm of Dr. C.C. Abbott, the well-known naturalist and author... . [The other, pictured at the right]...is a Spanish filter on a concrete column and base, the latter decorated with Moravian tiles.” (“Two Unique Concrete Ornaments”, *Cement Age*, Vol. XI, No. 3, September 1910, p. 162)



The current owner of the Moyer House, Whit Waterbury, writes that the porch fireplace and three others in the house still have the original Moravian tiles. He has also incorporated recently-produced Moravian tiles in two other projects in the house: "the supporting columns for a deck [in 2001] and a kitchen renovation [in 2005]." (Email from Whit Waterbury to Michael Padwee dated January 23, 2013)



The 2001 concrete aggregate on the left, and the 1906 aggregate on the right, as it looked in 2001. (Photos courtesy of Whit Waterbury)



The deck and columns were added in 2001.



New Moravian tiles in two of the supporting concrete columns for the deck, 2001.



"We used the [same] article you sent [to us] and another one from a magazine called [**Cement Age**...] in the construction of the deck so that the masons could duplicate as best as possible the way the aggregate was applied in the original construction." (Email from Whit Waterbury to Michael Padwee dated January 23, 2013)

In 2005 the kitchen was renovated and new Moravian tiles were again used.



(Photo courtesy of Whit Waterbury)



The living room fireplace, 2013. (Photo courtesy of Whit Waterbury)

The other Moravian fireplace tiles in the Moyer House are also original 1906 vintage.



A corner of the living room fireplace with Moravian tiles. (Photos courtesy of Whit Waterbury)



Front hall fireplace detail.



Master bedroom fireplace.



Master bedroom fireplace detail. (Photos courtesy of Whit Waterbury)

Although there is no written proof that Henry Mercer and Albert Moyer were anything but manufacturer and customer, the fact that one experimented with concrete construction and manufactured tiles, and the other was an officer in a cement company and most probably knew of Mercer's theories and patent, we might reasonably assume they were fairly well acquainted with each other.

Fonthill

One design critic wrote of the decorative potentials of tiles and used interior views of Mercer's home, Fonthill, as examples. "In order fully to grasp the potentialities of the tile as a decorative factor we must recognize, first, that its texture has an exceedingly important bearing in interior composition. Whether tiles be unglazed or glazed, and whether the glazed surface be smooth or diversified by irregularities, the texture is so totally different from the textures of any other materials that we must reckon...with its effect upon the other features of the fixed decorative background and with its effect upon the movable equipment. [...When considering color, color] goes along *pari passu* with the pattern interest and is its strong ally. ...tiles are preeminently suitable as a medium in which to present flat, decorative design, whether the adjunct of relief be employed or not... . As may be gathered from the examples given, the possible variations of pattern and treatment in this sort of tile decoration are practically inexhaustible." (Cranford Mease, "The Tile's Title to Esteem", *Arts & Decoration*, Vol. XI, No. 6, October 1919, pp. 289-290)

Henry Mercer also believed that the architect who used concrete should not be ashamed of using concrete as concrete. Concrete should not be masked with coverings, it's beauty should be enhanced: "Having made dry walls with air spaces; splendid columns, vaults, beamed or groined ceilings, all produced in a texture of the softness of pumice stone, and suggesting the touch of time and weather, what shall we do with it? One thing remains, namely, color, and our contribution to the subject is in the form of applying lintels, medallions, corbels, bands, corners and capitals as details, and mosaics to the structure in an artistic way." Mercer goes on to say that decoration should be used sparingly to break the flatness of a large concrete area. Mercer "devised a series of mosaics and tile patterns...wherein the design is produced by colored pieces of clay, cut out in the wet, burned, and joined together by joints of cement...[, where] the joints themselves form part of the drawing and help to delineate the design. Where pictorial in nature,...these patterns are bound to the surface of the building with rather conspicuously colored borders." (Henry C. Mercer, "Where Concrete Stands for Concrete", *Cement Age*, Vol. VI, No. 1, Jan. 1908, pp. 12-13)

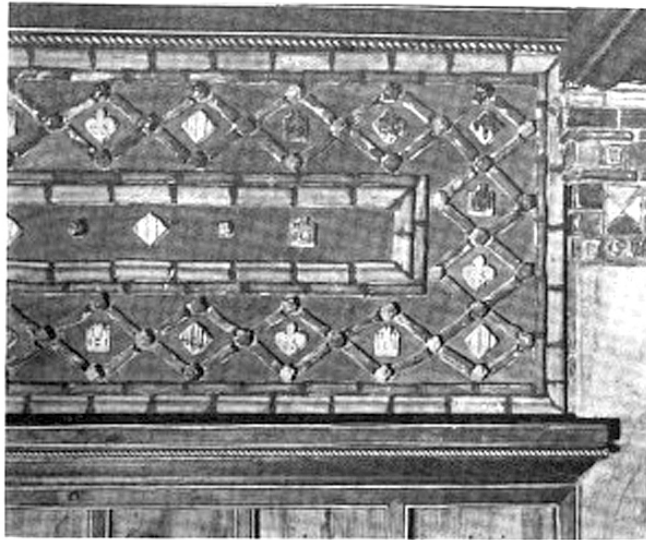


Triangular “Byzantine” pattern made of flat tiles slabbed together in gray cement and ready for insertion in the outer wall of a concrete building 50 feet from the ground. (Mercer, p. 10)

On the other hand, these patterns may be geometrical in design, “and consist of the repetition of certain units in the forms of triangles, lozenges, rhomboids, and so forth.” (Mercer, p. 13)



Whether these patterns are geometrical or pictorial, they “may be sunk below the true level of the building so as to be rimed with shadow or rise above it; and, furthermore, may stand upon a flat plain or level, or consist of molded and mounted units so as to intensify the lines of form in low relief.” (Mercer, p. 13)



A Gothic-style panel composed of relief tiles set upon blackened cement. (Mercer, p. 15)

“In all this work the value of contrast is largely depended upon. [Is it...] not true that glazes look more rich and glossy against the dullest and grayest possible surfaces of cement[...] ...experiment has already shown where...a real wall or a real column has escaped the plasterer and where these imperishable [tile] colors were embedded into...the building,...the needed life and glow has been added to the rough-hewn structure. (Mercer, p. 15)

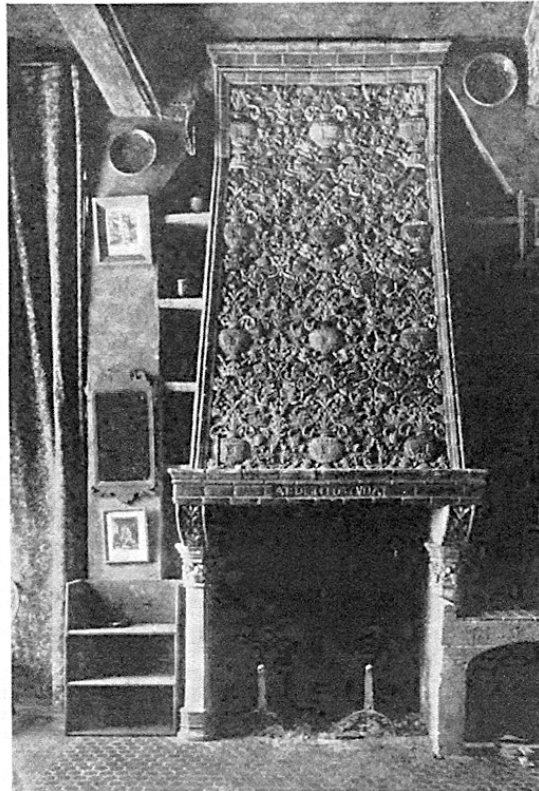




Three views of tiled interior concrete surfaces in the Grill Room and Conservatory of the Raquet Club, Philadelphia, Pa. The tiles are all from Mercer's Moravian Pottery. (Mercer, pp. 17, 18, 20)

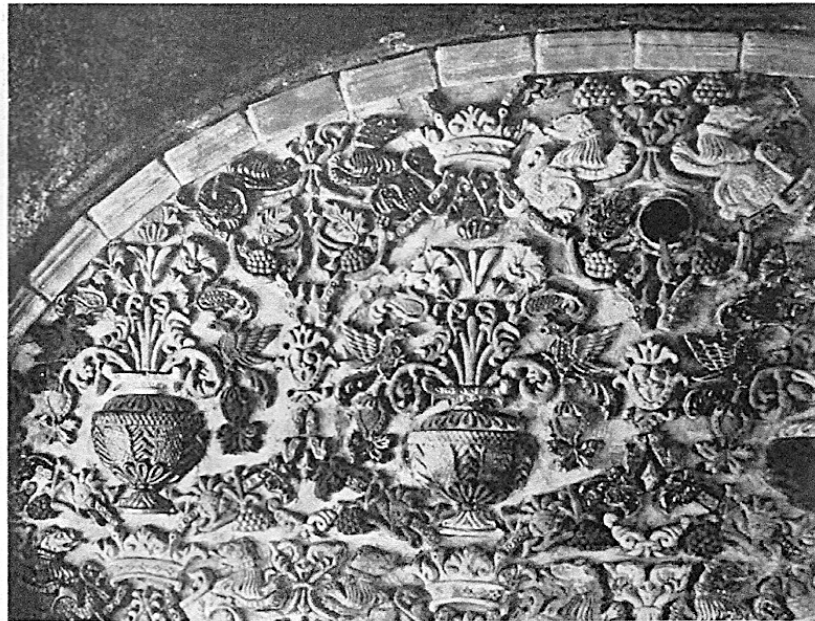
For Mercer, “The mosaic style and the innovations it precipitated (solid-clay color bodies, wider-set mortar joints) offered...much more flexibility in design and many more possibilities for original composition than his plain and conventional tiles.” (Cleota Reed, *Henry Chapman Mercer and the Moravian Pottery and Tile Works*, University of Pennsylvania Press, Philadelphia, 1987, p. 110)

Besides his patent for mosaic tiles, Mercer also developed what he called brocade tiles, which were used extensively in his house, Fonthill. “His brocades are silhouetted tiles, modeled in high relief and quite different in appearance and character from his flat mosaics. In his mosaics, the many small elements form a picture in which the concrete joints serve an outlining function... . This is not the case with his brocades, in which each modeled tile is a separate pictorial entity...often set well apart from others. Here the concrete serves as a background field, vignetting rather than outlining highly irregular shapes. The brocade style developed out of Mercer’s increasing interest in the decorative value of concrete.” (Cleota Reed, *Henry Chapman Mercer and the Moravian Pottery and Tile Works*, University of Pennsylvania Press, Philadelphia, 1987, p. 113)



OVERMANTEL OF BROCADE TILE, CEMENT GROUND.

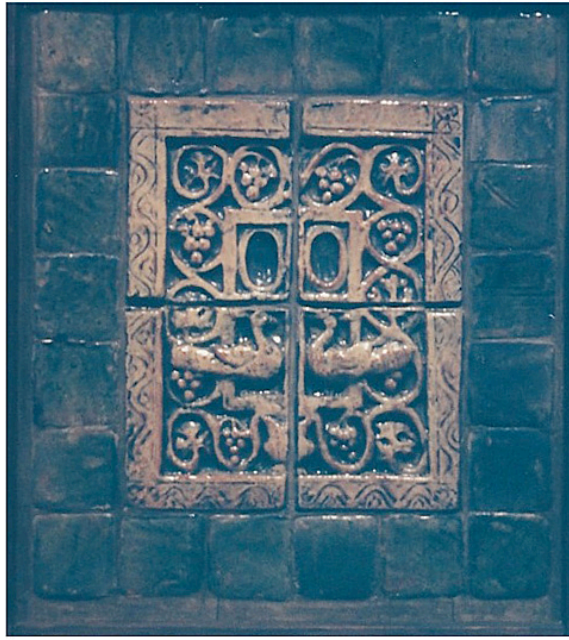
Examples of brocade-style tiles in Fonthill. (“Tile Resources in Surface Embellishment”, *The Architectural Record*, Vol. XXXVI, No. 5, August 1914, pp. 423, 426)



BROCADE DESIGN OF UNGLAZED TILE SET IN CEMENT GROUND.

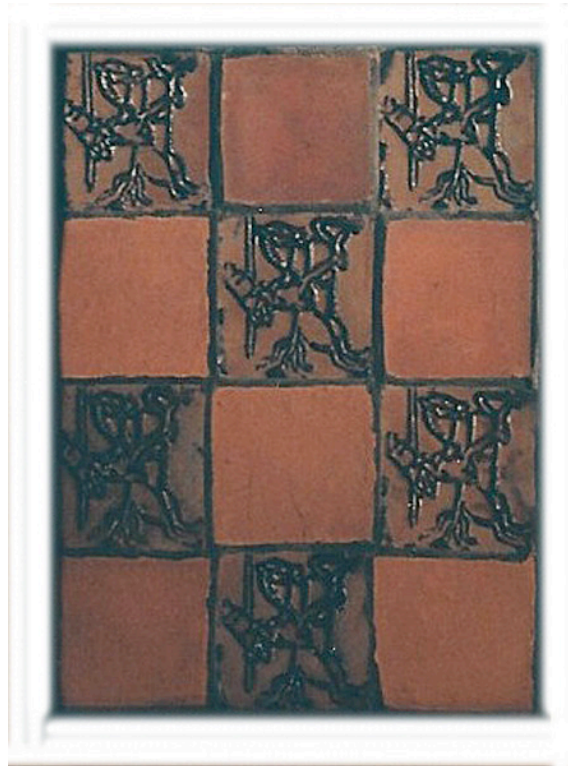
Mercer designed and built three buildings using concrete within a mile area in Doylestown, Pennsylvania. He built a museum (1913-1916) to house his "collections". Mercer would travel the countryside and bid in local auctions, buying almost anything that was for sale. He amassed a huge collection of objects that represented the everyday life of the people in the 19th and early 20th centuries, which now constitutes much of the Mercer Museum. "Henry Mercer...[was] convinced that the history of Bucks County was the history of the world. At first he did all the collecting himself, but over the years he developed quite a network of people that would bring him items from far and wide. His first collection burned down, thus creating the desire to house the entire new collection in a fireproof, concrete building. So in 1916, Mercer erected a 6-story concrete castle. The towering central atrium of the Museum was used to hang the largest objects such as a whale boat, stage coach and Conestoga wagon. On each level surrounding the court, smaller exhibits were installed in a warren of alcoves, niches and rooms according to Mercer's classifications — healing arts, tinsmithing, dairying, illumination and so on. The end result of the building is a unique interior that is both logical and provocative. It requires the visitor to view objects in a new way. It is easy to follow and gives you a wonderful sense of how things were actually used."

<http://www.artandarchitecture-sf.com/category/u-s-cities-other/philadelphia>



Photos of Moravian tiles in the Mercer Museum. (Photos courtesy of Michael Padwee)





Henry Mercer also built the Moravian Pottery and Tileworks (1910-1912), which has continuously produced tiles for over a century. Lastly, he built his home, Fonthill (1908-1912), and he used both antique and his own tiles throughout the house.

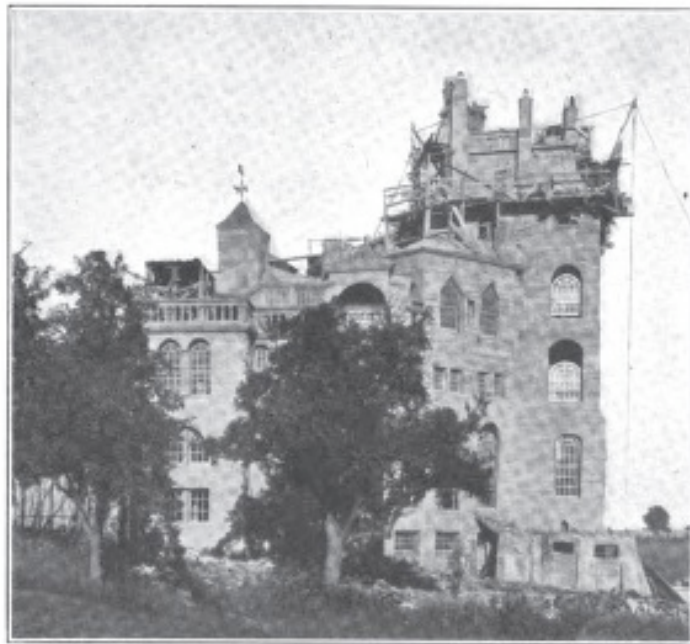


Photo of the Mercer Museum, c. 2006, courtesy of KForce: <http://en.wikipedia.org/wiki/User:KForce> and <http://en.wikipedia.org/wiki/File:MercerMuseum.jpg>

Photo of the Moravian Pottery and Tileworks, c. 2006, courtesy of Babagaga,



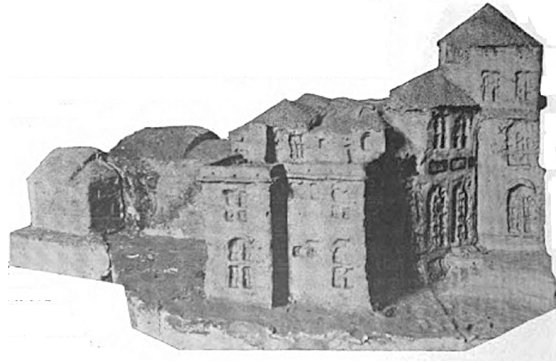
<http://en.wikipedia.org/wiki/File:MoravianTileWorks.jpg>



Fonthill under construction. (*The Journal of the American Society of Mechanical Engineers*, Vol. 33, No. 5, May 1911, p. 613)

According to Cleota Reed, in about 1907 Mercer began to visualize what each room of the interior of his residence would look like. He then began to think about the exterior of the structure, and he built a plaster to-scale model to work from. The house “structure is of reinforced concrete throughout and a fire could be started in any part of the building

without endangering a single structural feature except the window frames. In some cases even these are made of cement. Foundations, walls, columns, beams, floors, stairways and roof are all of indestructible concrete... . One of the unique features of this house is a large fireplace on the roof, built into an arch that shelters a portion of the roof garden.” (“Bonfire on His Housetop”, *Cement Age*, Vol. XI, No. 2, Aug. 1910, p. 98)



Fonthill Plaster Model. (“Bonfire on his housetop”, *Cement Age*, Vol. XI, No. 2, Aug. 1910, p. 98)



Photo of Fonthill, c. 2006, courtesy of KForce, <http://en.wikipedia.org/wiki/File:Fonthill.jpg>



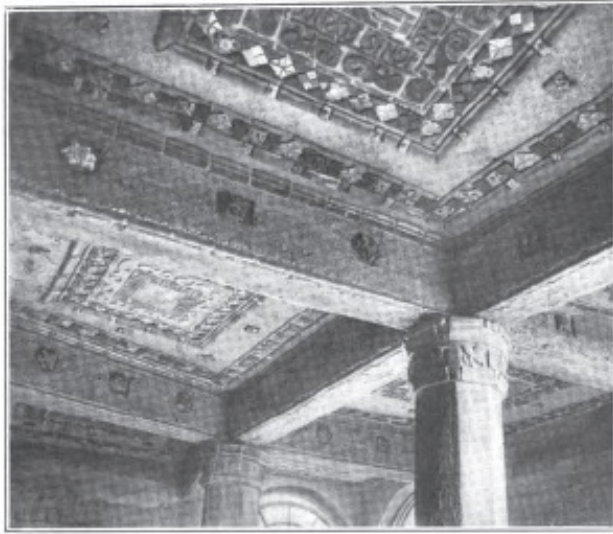
Tile frames a door in Mr. Mercer's house with stunning effectiveness.

(This photo and the photo below from: Cranford Mease, "The Tile's Title to Esteem", *Arts and Decoration*, Vol. XI, No. 6, October 1919, p. 289)

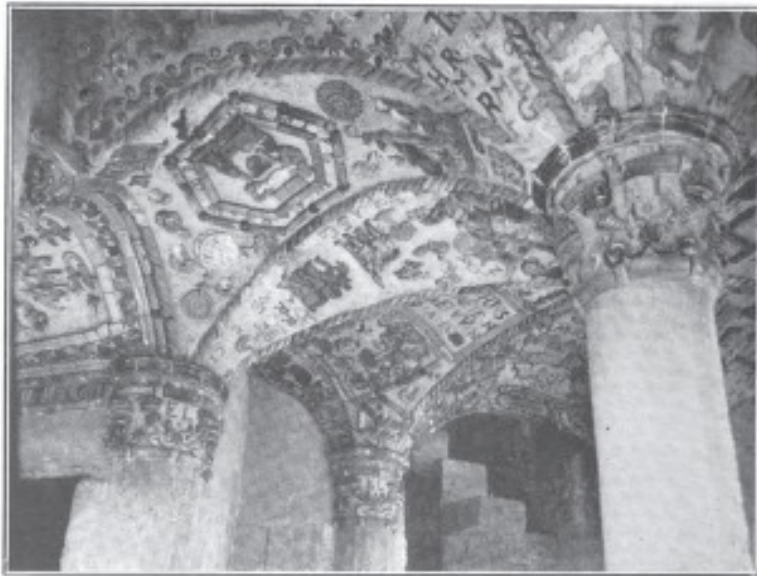


Another of Mr. Mercer's chimney designs that has fine architectural feeling.

Mercer's method of room construction and ornamentation was called "'earth vaulting', [...which he described as]: 'You stand up a lot of posts--throw rails across them--then grass--then heaps of sand shaped with groined vaults, then lay on a lot of tiles upside down and throw on the concrete. When that hardens, pull away the props and you think you're in the Borgia room at the Vatican.' ...Mercer deliberately left the concrete raw and unpainted, appreciating the vitality of residual marks of the casting process." (Michael Gotkin, *Artists' Handmade Houses*, Abrams, New York, 2011, p. 10)



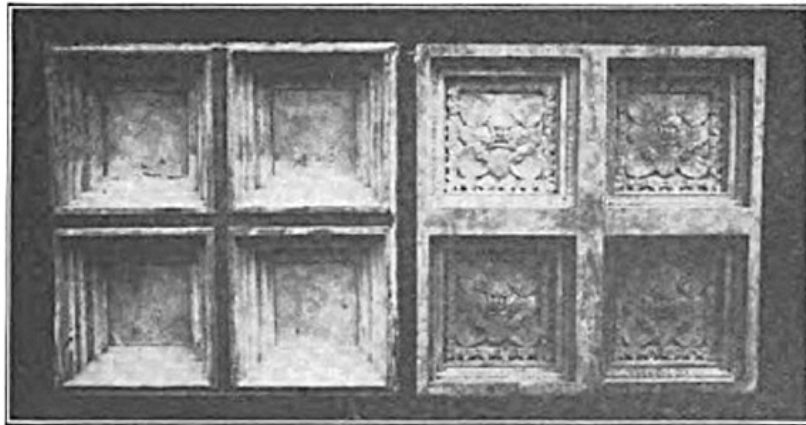
A tiled ceiling at Fonthill.





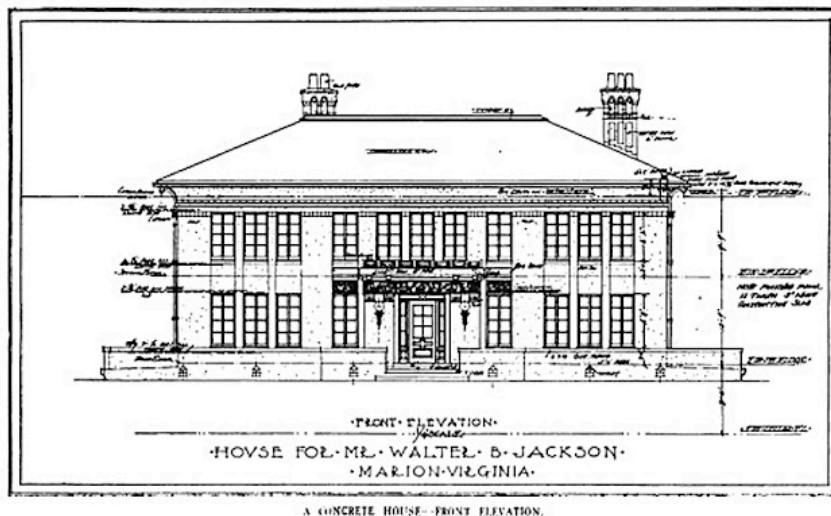
A concrete window sash and tiled, concrete ceiling at Fonthill. (The previous three photos from Frank B. Gilbreth, "Fires: Effects on Building Materials and Permanent Elimination", *The Journal of the American Society of Mechanical Engineers*, Vol. 83, No. 5, May 1911)

Another well-known contemporary of Mercer, the architect Frederick Squires, was also a proponent of the use of concrete. Squires, however, differed from Mercer in the construction of his concrete ceilings. Squires developed "a method of duplicating the most intricate of cast ceilings in solid concrete... . [He employed...] reverse coffers of moulder's sand...which are placed on the form before the concrete is poured. When the forms are removed, the panels are exposed...[all] in one operation." (C.W. Boynton and J.H. Libberton, "The Decorative Possibilities of Concrete", *Journal of the Western Society of Engineers*, Vol. XVIII, No. 8, Oct. 1913, p. 731)



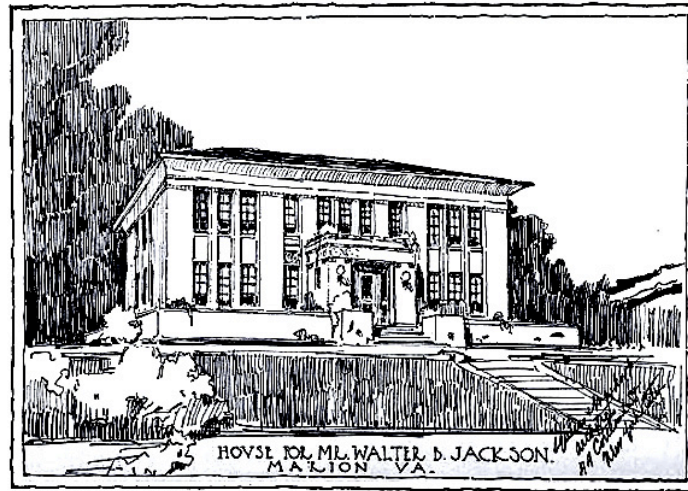
Sample of Paneled Ceiling Work Done with Sand or Plaster Molds.

Squires and his partner, John Wynkoop, used tile ornamentation on some of their concrete houses. In 1910 Squires and Wynkoop designed a concrete house for Walter B. Jackson in Marion, Virginia.



(From *Cement Age*, October 1910)

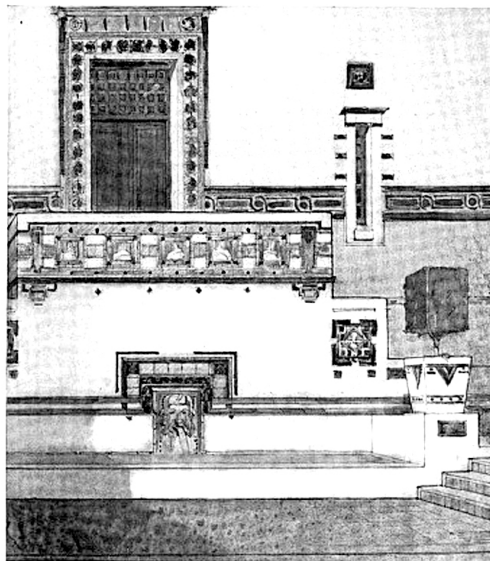
Of their building the architects wrote, "The house itself is built almost entirely of concrete... .the principles followed were those of having exterior walls, girders and slabs and interior bearing points of poured reinforced concrete. ...The method of decoration is one of cast concrete ornament...and...the introduction of colored tile under the main cornice." (Frederick Squires and John Wynkoop, "A Concrete House", *Cement Age*, Vol. 11, No. 4, October 1910, p. 200)



Squires & Wynkoop, New York, Architects.
 A CONCRETE HOUSE—PERSPECTIVE VIEW. (See page 211.)

(From: Frederick Squires and John Wynkoop, "A Concrete House", *Cement Age*, Vol. 11, No. 4, October 1910, frontispiece)

Squires and Wynkoop also prepared drawings for another (unidentified) concrete country house that extensively used tile decoration as seen in the ad below.

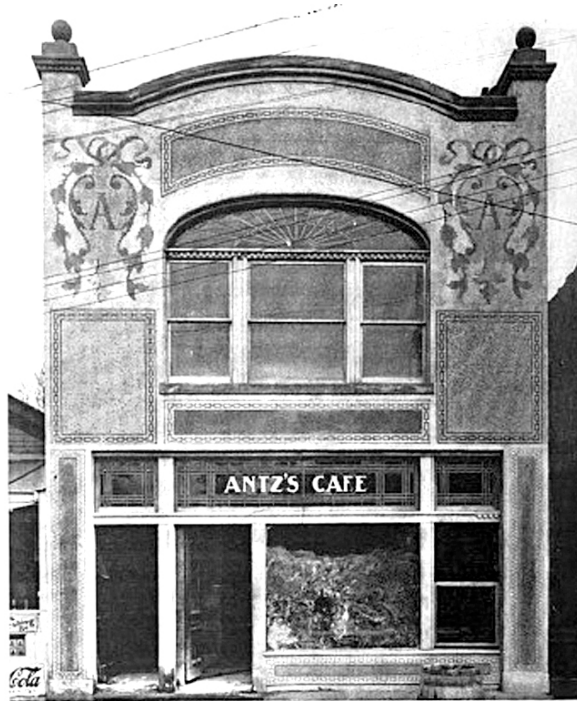


From a sketch by Squires and Wynkoop, Architects
 THE ENTRANCE AND APPROACH TO A COUNTRY HOUSE

Murosa

Another method of decorating concrete structures with mosaic tile work was called "Murosa" after its originator, Mr. Romana Rosa, President of the American Mosaic and Tile

Company of Louisville, Kentucky. "This material can be applied to any structure, old or new, and is a concrete mixture put upon a wall ["mura" in Italian] of rough brick, metal lath, or other rough surface to which the concrete will adhere. ...In addition, to this plain surface, there is added such decoration as desired. The latter [in the illustrations below] is made with Roman faience tile [made by the Mueller-Mosaic Company of Trenton, New Jersey]. ...This material is suitable for either exterior or interior use... ." ("Method of Decorating Concrete Surfaces", *Cement Age*, Vol. XI, No. 2, August 1910, p. 109)



MUROSA CONCRETE WORK ON ANTZ BUILDING, JEFFERSONVILLE, IND.

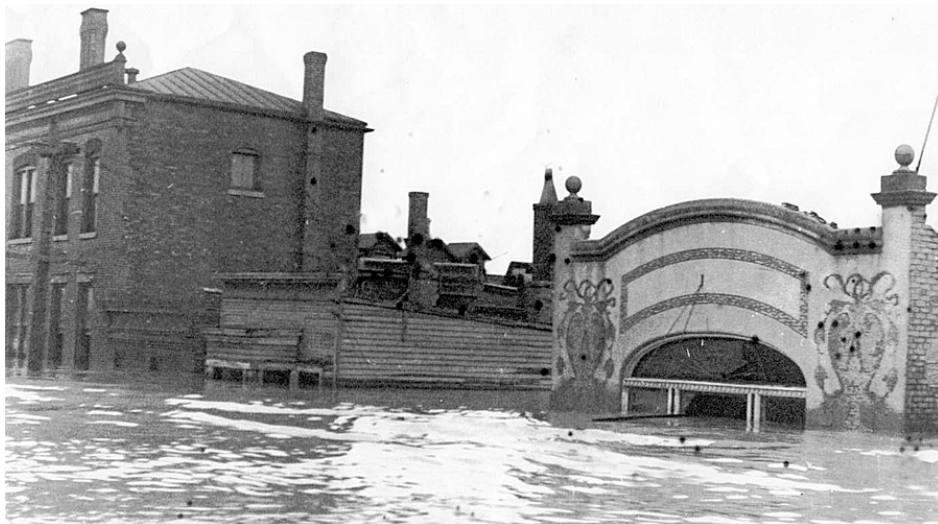
Antz's Cafe, Jeffersonville, Indiana, c. 1910. Murosa/mosaic decorated facade.

Antz's Cafe, 117 West Court Avenue, Jeffersonville, Indiana, was built about 1909 with its Murosa facade. By the late 1930s or early 1940s the building had doubled in size, the tiled facade was gone, and the fenestration was almost completely changed.



Probably taken in the 1940s. (Photo courtesy of Paul Bender)

Although one story says this was the result of two sticks of dynamite being thrown through the front window, the rebuilding of the Cafe may actually have taken place because of damage from a flood in Jeffersonville in 1937.



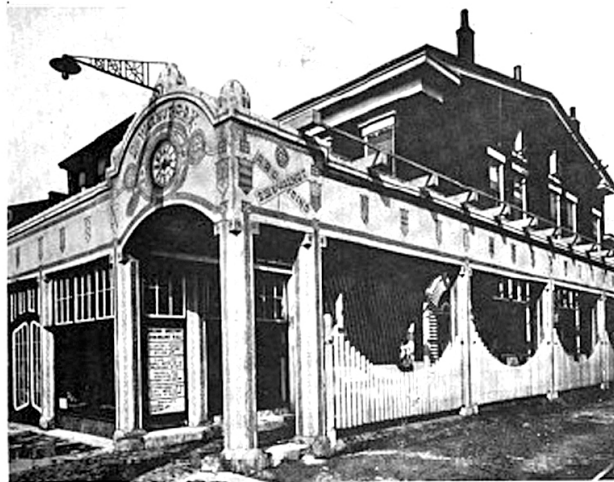
Antz' Cafe during the 1937 flood in Jeffersonville. (Photo courtesy of Paul Bender.)

At the time the photo of the "new" building was taken, Antz's Cafe was also an illegal gambling casino. By 1961 it was listed as "vacant" in the local *Caron's Directory*, and by 1962 it was demolished. (Information from local pediatric dentist, Paul Bender, who collects gambling memorabilia, and who researched material for this article.)



A \$5 gambling token from Antz's Cafe, c. 1937-41. (Photo courtesy of Paul Bender.)

Another building with a Murosa facade was the J. J. Gaffney Building, at Second and Walnut Streets, Louisville, Kentucky. The building was designed by the architect J. J. Gaffney as his office building. The Mueller-Mosaic Company of Trenton, New Jersey supplied the Roman mosaic tesserae to the American Mosaic and Tile Company, which executed Mr. Gaffney's facade design and color scheme. ("A New Branch of Mosaic Industry", *Clay Record*, Vol. XXXV, No. 4, August 30, 1909, p. 31 and *The Mantel Tile and Grate Monthly*, Vol. IV, No. VII, January 1910, p. 18)



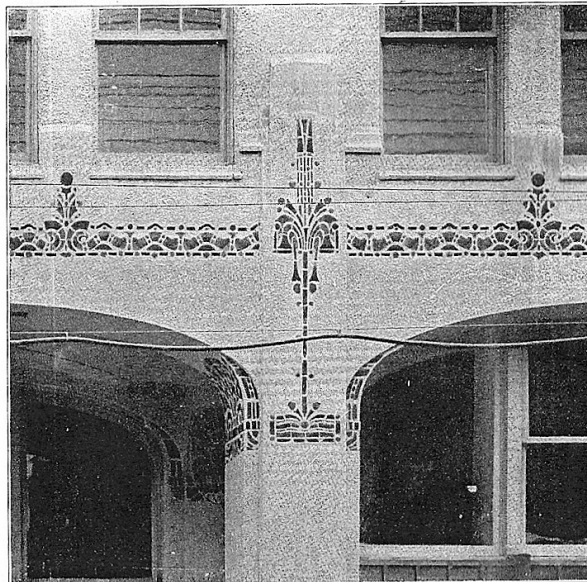
MUROSA CONCRETE WORK ON GAFFNEY BUILDING, LOUISVILLE, KY.

The J. J. Gaffney Building, Louisville, Kentucky. Murosa and Mueller-Mosaic Company tile work on facade. This building was demolished to make way for a highway. ("Method of Decorating Concrete Surfaces", *Cement Age*, Vol. XI, No. 2, August 1910, p. 109)



(Recent photo of Second and Walnut Streets courtesy of maps.google.com)

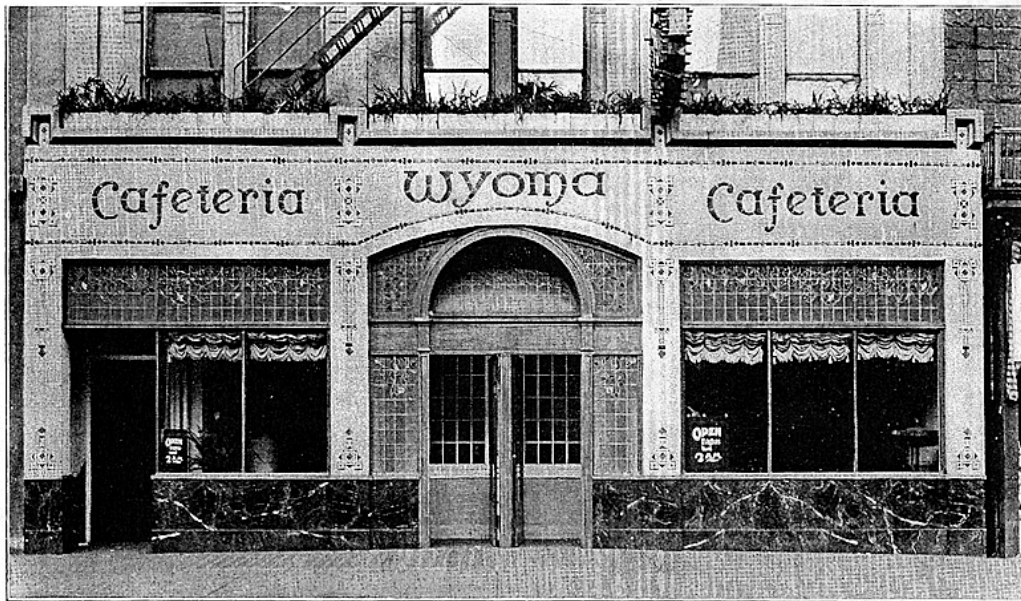
Many architects felt that concrete or stucco buildings were in need of decoration as efforts to color or stain them in the early 20th century had mainly failed. "The application of frost-proof tile solves these artistic and construction problems." "Herman Mueller, a pioneer in art tile work in America...has designed and developed art tiles for structural purposes... ." ("Brick and Art Tile in Architecture", *The Clay-Worker*, Vol. 76, No. 1, July 1921, pp. 21-22) One such building, the M. E. Blatt Building in Atlantic City, had Mueller Mosaic Company faience tile work over cement stucco.



FAIENCE INSERTS IN STUCCO, BLATT BUILDING,
ATLANTIC CITY, N. J.

(From: Mueller Mosaic Co., Trenton, N.J., *Faience Inserts: Frost Proof*, p. 39. Courtesy of the Newark Museum Library)

"The Mueller Mosaic Company not only furnished the tile strictly according to the designs and desires of the architects, [McLanahan and Bencker,] but, as is their custom, they carried out an exhaustive series of experiments until they found the proper process of applying this tile in a rational, secure and economical manner." ("Brick and Art Tile in Architecture", *The Clay-Worker*, Vol. 76, No. 1, July 1921, p. 22)



EXTERIOR OF CAFETERIA, SCRANTON, PA.

(From: Mueller Mosaic Co., Trenton, N.J., *Faience Inserts: Frost Proof*, p. 38. Courtesy of the Newark Museum Library)

Another similar building with a Mueller Mosaic polychrome faience facade on stucco was the Wyoma Cafeteria in Scranton, Pennsylvania. (I can find no mention of this building after the late 1920s.)

At a later date I hope to discuss more residential and commercial concrete structures with tile ornamentation.

I would like to thank Paul Bender for the use of his photos and for his help researching Antz's Cafe--if you are interested in gambling memorabilia, [contact him](#).

I would also like to thank Whit Waterbury, the current owner of the historic Moyer House, for his help in the preparation of this article and for the use of his photos.