

LEED Newsletter

DOWNTOWN COURT TOWER

COPPER

ISSUE #3

October 2009

PROJECT FACTS

LOCATION

Phoenix, Arizona

CERTIFICATION TARGET

LEED-NC v3 Silver

GROSS SQUARE FOOTAGE

695,000 ft²

TOTAL PROJECT COST

\$340 million

CONSTRUCTION COST

\$259 million

OCCUPANCY

First Quarter 2012

ANNUAL ENERGY USE

(as designed): 66 kBtu/ft²
(12% baseline reduction)

ANNUAL CARBON FOOTPRINT

(as designed): 57 lbs. CO₂/ft²
(75% baseline reduction)

PROJECT TEAM

OWNER

Maricopa County

ARCHITECT

Gould Evans+AECOM

LANDSCAPE

Ten Eyck Landscape Architects

ENGINEERS

MEP: Syska Hennessy Group
Structural: Paragon Structural
Design

Civil : PK Kland

SECURITY ELECTRONICS

Buford Goff & Associates

ACOUSTIC & AV

McKay Conant Hoover

LIGHTING

Candela

LEED CONSULTANT

Green Ideas

COMMISSIONING AGENT

Enovity, Inc.

PROGRAM MANAGER

Parsons & HDR

CONSTRUCTION MANAGER AT RISK

Gilbane/Ryan

Copper's Significance to Arizona

It is important to understand the significance of copper to Arizona and the role it has played in the successful development of the state. The shades of dark, weathered brown it displays are as rich as Arizona's history. The discovery of rich deposits of copper in the early 1800s led to copper being one of the "Five C's" that Arizona was built on—Copper, Cattle, Cotton, Citrus and Climate. Since 1910, Arizona has been the nation's top copper-producer, producing more than all other states combined. The copper industry was responsible for bringing the railroad to Arizona and was instrumental in the territory achieving statehood in 1912. The demand for copper in technology, communication and transportation has, and continues to be, a vital source of Arizona's economic development and prosperity.

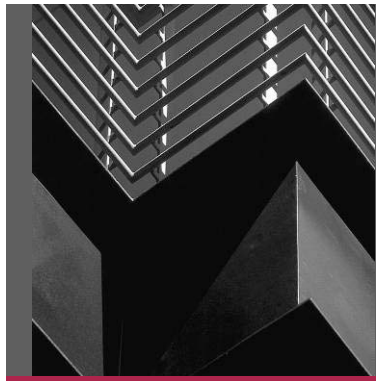
Out of all the materials that people mine, copper is one of the most versatile and durable. It can be found on buildings throughout the state, and has been chosen to be installed on the Downtown Court Tower as a symbol of where the state started and where it will go in the future.

Copper's Significance as a Building Material

Evidence suggests that people have been using copper as a building material for at least 11,000 years, proving it stands the test of time. Copper roofing and wall cladding has a history that dates back many centuries. In the early part of this country's history, many buildings were roofed with copper.

Copper can last for decades, even centuries. An evaluation of the Statue of Liberty showed that the natural weathering and oxidation of the copper skin is equal to just .005 of an inch in a century, proving the remarkable durability of copper.

Today, copper is a highly popular and widely-used material within the architectural and construction building industries for roofing, walls and many other applications. Not only does copper provide a unique and pleasing aesthetic, with proper fastening, skilled craftsmanship, and consideration for thermal and building movement, well-installed copper can last many decades with virtually no maintenance.



LEED Newsletter

DOWNTOWN COURT TOWER

COPPER

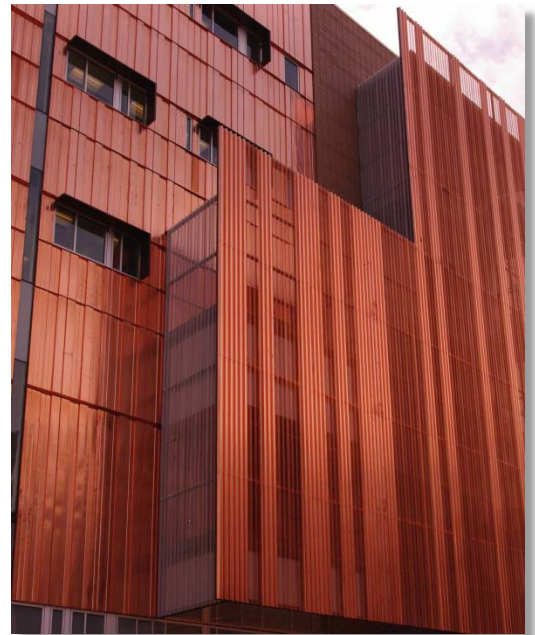
ISSUE #3

October 2009

The Nature of Copper

Since copper is a natural element, one of the most common questions asked is “What will it look like when it weathers?” Even as more and more copper is incorporated into construction projects, some contractors, architects, and building owners may have little or no knowledge of how copper transforms from a luminous surface to its distinctive weathered color.

The natural weathering of copper through oxidation is called patina. Copper will develop a complex green patina in climates that have high amounts of moisture, salt and airborne sulfur compounds. Over time, cuprous and cupric sulfide conversion films are interspersed with the original surface. As they build, the copper darkens at a rapid rate and will naturally turn to the familiar green patina. This will not occur in an atmosphere free of sulfur or coastal moisture, as we have in Arizona. When copper is exposed to the atmosphere in a dry climate, such as Phoenix, it tarnishes and turns dark. Due to the very dry climate, the patina process prevents copper from weathering to a green patina. Typically, within a year or less after installation in Phoenix, copper will lose its initial coloration, and take on a uniform brown or dark bronze color.



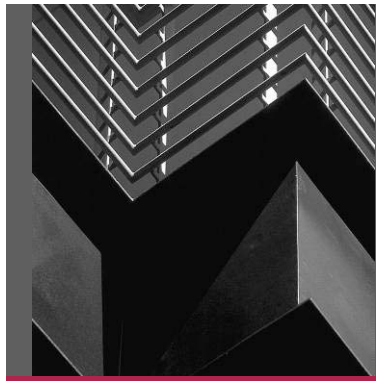
The bright surface typical of newly installed copper at the ASU Nursing Building.

The Court Tower Copper

The copper for the Court Tower will be Revere's Bare/Bright Classic Copper as provided by Revere Copper Products. The history of Revere Copper has run parallel with that of the United States, since Paul Revere founded America's first copper rolling mill in 1801. Architects, designers, building owners and specifiers have long regarded Revere's Bare/Bright Classic Copper as the premier roofing and wall cladding product. The copper cladding used on the Court Tower is made of 90% to 95% recycled “number 1, bare-bright” scrap obtained from both industrial sources and metal scrap dealers. Depending upon market conditions, the exact percentage of recycled copper and mix of post-consumer and post-industrial material will vary.



Typical dry climate copper patina at Glendale Community College



LEED Newsletter

DOWNTOWN COURT TOWER

COPPER

ISSUE #3

October 2009

LEED Version 3

On April 27, 2009, the United States Green Building Council (USGBC) launched LEED v3, the next generation of the LEED rating system. This step allows LEED to evolve, taking advantage of new technologies and advancements in building science while prioritizing energy efficiency and CO₂ emissions reductions.

All LEED v3 projects will use LEED Online version 3. The new version of LEED Online is faster, smarter and a better user experience. It is designed to be scalable and more robust, through improved design, a more intuitive user interface, better communication between project teams and certifying bodies, and upgrades that respond to the changes in the LEED 2009 rating system.

Maricopa County intends to have the Court Tower serve as the prototype LEED building for all other County Projects to follow. As such, the LEED team has taken the step to transition the project from the older LEED v2.2 to the new LEED v3. The transition to LEED v3 also shows Maricopa County's commitment to the environment by holding the Court Tower, and all subsequent projects, to the most advanced standard for green building.

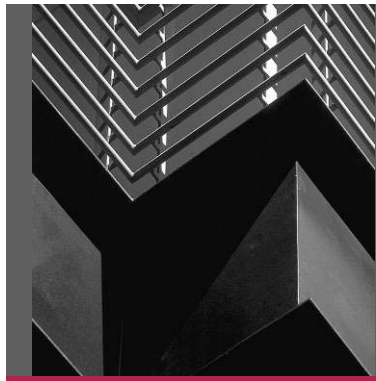


Construction Update

MADISON STREET WATERLINE REPLACEMENT

The existing pipe materials being removed are crushed with concrete and steel reinforcing wire separated into two waste piles for disposal.





LEED Newsletter

DOWNTOWN COURT TOWER

COPPER

ISSUE #3

October 2009

STEEL ERECTION Structural steel erection is proceeding with vertical and horizontal members beginning to define plaza level and 2nd floor spaces

WATERPROOFING AND BACKFILL At the perimeter of the Court Tower foundation walls, progress is being made to close the excavation including installation and testing of the perimeter drainage system.



MADISON STREET TUNNEL CONNECTION Excavation at northwest corner of the building will make way for forming and shoring activities to begin for tunnel connection between Court Tower and existing tunnel system.

