



Canadian Copper & Brass
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The New School – University Center
A study of the cladding system used on
the new Union Square Campus building.



Copper Development
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New York City is home to some of the world's most iconic buildings; Frank Lloyd Wright's Guggenheim Museum, Ludwig Meis Van Der Rohe's Seagram Building, the Woolworth Building, the Flatiron, and many others too numerous to mention. On its tightly woven blocks, citizens and visitors alike are surrounded by centuries of notable architecture. As anyone who has ever been there can attest, the city is constantly rejuvenating itself, adding many new buildings each and every year. Only some of these ever strive to be memorable, much less with time perhaps iconic as well. One that feasibly has a chance is the new facility for The New School - University Center.

Since 1919, with New York City locations from Bank Street in the West Village to West 85th Street, "The New School" commitment to creativity, innovation, and social engagement has always prevailed. The newly opened University Center, at the intersection of 14th Street and Fifth Avenue provides a focal point for the school's downtown campus. The 375,000 sq. ft. (34,839 sq. m), 16-storey building unifies "The New School" community as an urban university and continues its historical role in shaping Greenwich Village. State-of-the-art classrooms, a library-research center, 800-person auditorium, cafeteria, event café, and a 600-bed student residence, all promote collaborative and interdisciplinary learning within a structure immediately viewed as iconic.



Cover photo: *The University Center as seen from the corner of 13th Street and Fifth Avenue.*
Photo: Martin Seck, 2014.



A Muntz metal (C28000) ingot, sometimes called a "cake", positioned alongside a furnace where it will be processed into roll form.

The ingot measures 50 in x 7 in x 260 in (1270 mm x 178 mm x 6604 mm) and weighs 26,700 lbs (12,111 kg).

The University Center is the culmination of ten years of planning. The owners, funders, developers, architects, contractors, fabricators, suppliers, and distributors engaged in a collaborative, creative approach reflecting the educational philosophy of “The New School”.

An entire book could (and should) be written about the creative process that went into the crafting of the structure. This case study will focus on one component of the process as an example of the care and thoroughness that went into every design decision. The thought and consideration that went into the material sourcing, specification, fabrication, and installation of the Muntz metal cladding system is representative of the construction of the building as a whole.

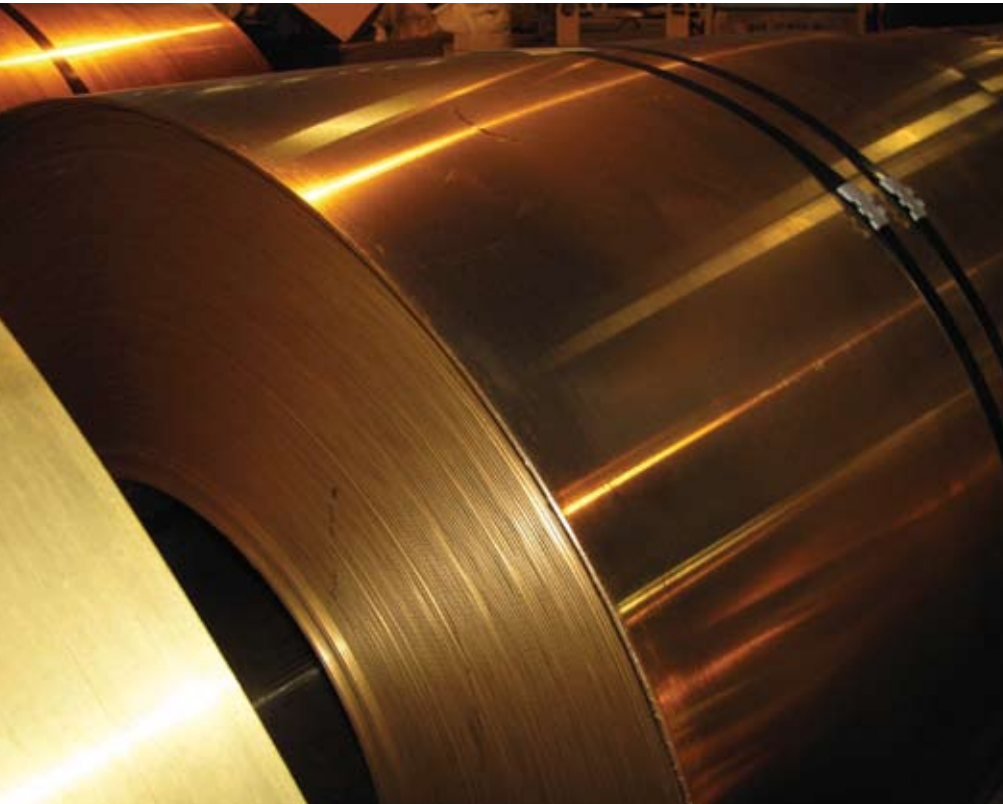


The roll has been processed to remove the slag. At this station the operator bands the roll and secures the positioning for crane access and transfer (see photo on page 8).

The material thickness has been reduced further. For the application as cladding on the University Center the thickness is 2.0 mm.

The ingot processed to roll form, still exhibiting an outer coating of slag. Note the thickness of the material.

The Green Building Certification Institute (GBCI) has granted University Center a LEED Gold rating. A component of this certification involves the external cladding. In keeping with LEED 2012 Gold rating requirements, only 30 percent of the façade is glass. Brass and glass, a relatively common contrast of materials executed in an uncommon manner. Those who encounter the building as they pass enjoy the juxtaposition of materials - a complex design, leading the eye to the activity within. Designated as a “Leader in Energy and Environmental Design”, the University Center pleases upon introduction, invites you within and demonstrates a depth of character by pursuing and achieving an industry-wide recognized standard of excellence.



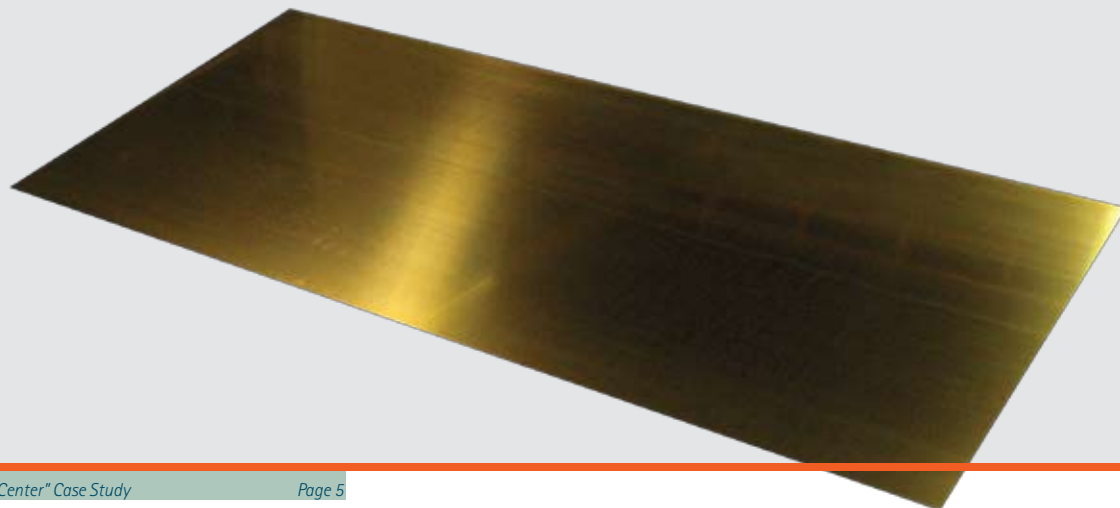
The shared creative spirit and energy of the many stakeholders is obvious to all who approach the exterior of the new University Center. The installed cladding is a finish that is alive. “We talked internally about creating a variety of finishes that we could place in front of the funders, architects, and contractors to demonstrate the availability of intellectual manufacturing close to the building site,” said Cyrus Mosun of Soheil Mosun Ltd., located in Toronto. In addition to matching a 75 x 75 mm sample that was provided to them, Soheil Mosun Ltd., produced a variety of finishes (and, at the end of the day, more than a few hundred pounds of sample pieces themselves) and in conjunction with the largest architectural metal distributor in Canada, Canadian Brass and Copper Co. (also located in Toronto), met with the principals at the contractors’ offices in New York. “Our thirty year history with Canadian Brass and Copper thrives on our common understanding of client driven perfection” is how Darius Mosun of Soheil Mosun Ltd. explains their relationship.

A close up of a finished roll of Muntz metal (C28000), banded and ready for fabrication.

Depending on the final use, this role could be slit into varying widths, subjected to a punch press or cut into sheet size(s).

The task of producing such a range of samples, such a variety of finishes with its variances of colours and appearances, was just a glimpse of the type of artistry in production that Soheil Mosun Ltd. and their team of artisans brought to the entire project. In many ways, the singularity of each panel, and the craft employed in their design and fabrication are a message against much of the standardization typical today in society and manufacturing and a representation in architectural form of what The New School represents.

*The Empire State Building shines brightly in the background as the copper and glass facade of The New School - University Center provides a warm welcoming street presence to the community.
Photo: James Sewing, 2014.*



The photo to the left shows Muntz metal in 4 ft. x 8 ft. (1219 mm x 2438 mm) sheet form.

It is the same material as the rolled form on page 4. Different light sources present the sheet as brass and the rolled form as brownish copper .



The above photo is an approximate 2 ft. x 4 ft. (610 mm x 1219 mm) patinated panel ready for installation on the University Center. The folded sides all vary in depth from end to end depending upon final positioning needs.

The diagonal crease creates depth and texture as best demonstrated by the top photo on page 7. Just on this small section of the University Center cladding, four different shapes of panels can be counted. Together with the glass sections, they turn an exterior wall into a natural reflective canvas.

Each of the 6,500 panels were to be unique and cloud like. Originally, zinc was specified as the cladding material. The samples created by Soheil Mosun Ltd., resulted in the use of Muntz metal. C28000 Muntz metal, is a copper alloy containing 60% copper (Cu) and 40% zinc (Zn). The patina on the panels will evolve, However the use of Muntz metal means it will not shift to a green patina normally associated with mature copper typical to New York or the eastern part of North America.

Aurubis, one of the leading sheet copper producers in the world, produced the approximate 508,000 lbs (227,000 kg) of sheet form Muntz metal used to fabricate the panels. How appropriate that a timeless New York City structure is clad in materials produced in New York State, in this case Aurubis' Buffalo facility. The 2.0 mm sheet was shipped to Gamma International in L'Ange Gardien, Quebec where the specific panel sizes were cut, folded and creased. This type of fabrication adds to the creation of an undulating façade when the panels are installed.





Skidmore, Owings & Merrill LLP, the architect of the project (SOM) had staff on site at the Soheil Mosun Ltd., facility over many days to inspect the newly patinated panels. The inspection criteria involved a review process based on a series of control panels and a viewing scenario that replicated the actual building site. This meant that the panels were not inspected on a tabletop, from someone sitting down. Rather it was done outdoors, in an attempt to recreate as natural a setting as possible. The goal was not to make all the panels identical but to establish a protocol allowing production staff to use their collective expertise in an artistic manner.

In place, the 6,500 panels are the most talked about and acclaimed features of The University Center along with three staircases traveling from street level to the seventh floor. The staircases are positioned on the perimeter of the three faces of the building and are glass clad. The windowed staircases allow an unfettered view of the social activity within. The balance of this view and a live, undulating, ethereal, façade of patinated panels is representative of The New School's long standing, high regard for public engagement.

Left to right, Peter Sheppard and Rob Cox of Canadian Brass and Copper Co., with Daruis Mosun and Cyrus Mosun of Soheil Mosun Ltd., pause to enjoy the sun in the Soheil Mosun Ltd. foyer and reflect upon another project accomplished together.





In many ways, The New School Project represents an evolution in architectural technology and process of manufacturing, and what is possible with building materials in the 21st century. For the companies involved it represents an achievement of the highest level. It has allowed them to evolve beyond just fabricators and suppliers, allowing them opportunities to express themselves more as artists and facilitators, especially when projects demanding that level of detail and attention arise.



On the way to 13th Street and Fifth Avenue:

*Top photo: Roll form
Aurubis Buffalo, Inc
Buffalo, NY*

*Middle photo: Sheet form
Canadian Brass and Copper Co.
Concord, Ontario*

*Bottom photo: Folded, creased and patinated
Soheil Mosun Ltd.
Toronto, Ontario*



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