

Dear Colleagues,

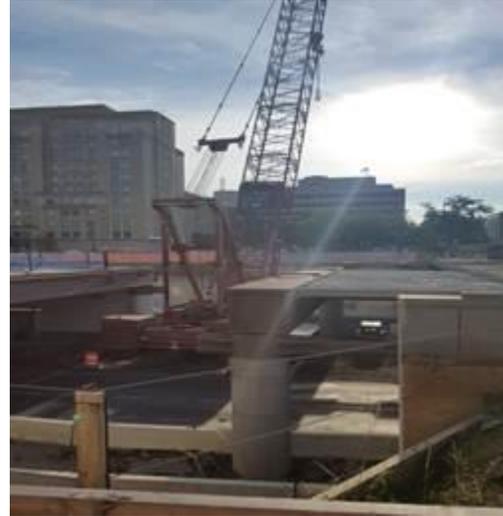
Welcome back! It has been a long hot summer. Despite the brutal weather, the BBC construction team has made considerable progress on the Capitol Crossing Project. For those of you who are new to Georgetown, this will be the first of several CONSTRUCTION NOTES you will receive this year that describes the progress of the Capitol Crossing Project, interspersed with commentary on construction materials and methods, neighborhood history, and various other meditations on time, place, and society. If you want to familiarize yourself with our East End neighborhood and the activities that surround you, you can read the entire series of CONSTRUCTION NOTES at <http://www.law.georgetown.edu/campus-services/facilities/construction-info/index.cfm>

So much work has occurred since June and so much more will occur this academic year. Although we describe the development as the Capitol Crossing Project, it actually comprises several discrete sub-projects. A utility relocation project has been going on for more than two years. New sewer, water, and gas lines and electrical and cable transmission lines and feeders have been laid beneath the streets and sidewalks that surround the perimeter of the project and within the project footprint itself. This work continues, primarily now along Massachusetts Avenue and 3rd Street. In time, new street lights and traffic signals will be installed and the surface streets and the sidewalks, including those on the western side of our campus, will be replaced.

Some of the most visible work continues on the highway, deck, and bridge sub-projects -- work which we have been watching for more than a year. Currently, all but one section of the deck above the southbound lanes of the highway have been erected and the concrete topping slab has been poured up to the G Street Bridge. The picture below shows a motorized screed smoothing and tapering the surface of the G Street Bridge to maintain a slope that enables rain water to flow to the drains rather than puddle on the surface. One segment of the deck, above the southbound lanes at E Street, remains unfinished. It provides a parking space for the 300-ton Manitowoc crane that lifts the steel and concrete beams onto the columns supporting the deck surface. The Crane has also installed the steel beams and concrete slabs above the northbound lanes up to the new G Street Bridge. Steel and concrete beams and percast



A Motorized Screed



Southbound Lane Deck at E Street

concrete slabs will continue to be installed above the northbound lanes until they are completely covered in early November. At that point, the Manitowoc will be removed from the southbound lanes, and the last concrete slabs will be placed on the beams. The deck will then be finished and the highway ditch that marred the East End for almost 50 years will no longer be visible.

The new tunnel will intersect with the existing tunnel on the north side of Massachusetts Avenue. The tunnel connection is yet another sub-part of the Capitol Crossing Project. Joining the tunnels requires compatible ventilation and lighting systems. The first phase the sub-project is underway and will continue until sometime in November. The new ventilation and lighting systems for the north tunnel will be completed in the summer of 2017.

Piles have been driven and excavation has begun for the underground garage along the 3rd Street side of the project. The north section of the East Concourse, the underground section of the building that will house



Walls for the Center Block Section of



Garage Excavation

The East Concourse

its mechanical and electrical equipment, is almost complete. It is currently being outfitted with conduit and lighting. The entire East Concourse will also be completed in November. The 2nd Street exit portal from the highway is



The Massachusetts Avenue Entrance to the Highway

completed and one lane is active, spilling traffic onto 2nd Street and then to Massachusetts Avenue. The easternmost segment of the new Massachusetts Avenue entrance portal at 3rd Street has been fully excavated. Much of the concrete drive ramp has been paved, and rebar is being set to reinforce its concrete walls.

In my June 17, 2016, CONSTRUCTION NOTE, I described how the Tower Crane would be used to construct 200 Massachusetts Avenue -- the first of the five mixed-use buildings that will be erected on the deck. <http://www.law.georgetown.edu/campus-services/facilities/construction-info/upload/2016-6-17-Tower-Cranes.pdf> As you can see, the building's concrete columns and decks have now reached the fourth floor. Columns and floors will continue to be formed and poured until the building reaches its ultimate height of twelve stories. The tall steel beam in the photo below to the right was erected two weeks ago. The beam serves to strengthen a concrete column that will surround it. Two such beams and columns will be erected in each of the first two buildings. Concrete columns, even when reinforced with steel, have a maximum safe height. If a column is too tall, it can be affected by a concept known as the "slenderness ratio." The

slenderness ratio derives from a formula theorized in 1757 by Leonhard Euler, the renowned Swiss mathematician and engineer. Columns are strong enough to support their weight-loads only if they are



250 Massachusetts Avenue



Steel support beam

short. When concrete columns are long and slender, they become prone to buckling and structural failure. To prevent buckling failure, concrete is poured into a column-form that surrounds a steel beam. The form is also packed with additional rebar. The combined strength of the steel and concrete permits the column to resist lateral forces and prevents buckling. The pictured reinforced column will support an architectural screen wall that will sit in front of the curtain wall on the west side of 200 Massachusetts Avenue. Another screen will occupy space on the 3rd Street side of the second building, 250 Massachusetts Avenue. The screens will be decorative rather than structural -- architectural lagniappes adding to the visual interest of the buildings.

200 Massachusetts Avenue will be topped out around February, 2017. Erection of its glass curtain walls will then begin in June of 2017. Construction of 250 Massachusetts Avenue will begin once the garage on 3rd Street is topped out to street level. You can see an artist's renderings of the project and other details about Capitol Crossing at <http://capitolcrossingdc.com>

There are two other sub-projects on 3rd Street, one involving Holy Rosary Church and the other involving the Jewish Historical Society that will be subjects of later CONSTRUCTION NOTES. The latter, however, also provides the subject of this NOTE. Sometime in the early Fall,

the venerable and historical Adas Israel Synagogue, built in 1876, will be moved from its current location at 3rd Street to a temporary location near there. Towards the end of the Project, the Synagogue will be moved to a permanent site at the southeast corner of 3rd and F Streets, NW. Adas is the oldest existing synagogue in the District of Columbia and one of the oldest Jewish houses of worship in the United States.



Adas Israel Historic Synagogue



Artist Rendering of the Synagogue in its Future Location at 3rd and F Streets

In 1869, 38 members of the 17-year-old Washington Hebrew Congregation resigned from that congregation in order to return to more traditional orthodox Jewish rituals. Washington Hebrew, the first Jewish congregation in Washington, had originally reformed their religious practices to better accommodate their traditions to their new American experience. These reformed practices did not suit all members of the congregation, and so the more traditional members left Washington Hebrew and formed the Adas Israel congregation. By 1876, the new congregation purchased a lot on the southeastern corner of Sixth and G Streets, NW, (now occupied by the Metro Headquarters) for \$2,300 and built a simple, unpretentious structure that cost \$4,800. President Ulysses S. Grant attended the dedication on June 9, 1876, and donated \$10, more than \$200 in today's currency, to the congregation. This was a significant act since Grant, the first U.S. President to attend a synagogue, had issued the infamous General Order 11 during the Civil War, an order that accused Jews of black market trading and expelled them from Kentucky, Tennessee, and Mississippi. President Lincoln quickly rescinded the Order. I will be writing more about Adas Israel and the Washington Jewish community in future CONSTRUCTION NOTES; today's NOTE is only about the Synagogue and its peripatetic history.

Over time, the Adas congregation grew and moved to larger quarters. The original synagogue ceased to be a place of worship for Jews in 1908 and changed hands and purposes over the years. With the passing of time, the memory of its early purpose faded. Unlike many other synagogues erected around the same time, the Adas Israel Synagogue was designed with an utter simplicity—both outside and in—that has been described as stripped-down Romanesque. The style embodies simple construction and little decoration, and gives the effect, as described by Dr. Samuel Gruber of the Jewish Heritage Research Center, of “comfortable dignity created by the judicious and balanced massing of building parts and disposition of elements.” It has, like all Jewish houses of worship, an ark for the Torah scrolls, the bimah -- a reader’s platform with a table and a railing -- and a pulpit.

In the 1950s, efforts began to preserve the building, but by 1966, the Washington Metropolitan Transit Authority sought permission to raze the building and replace it with WMATA’s new headquarters. The building was spared but it had to be moved – a move that was somewhat perilous. The weather was frigid on December 18, 1969, the day of the move. The first floor of the building proved too weak to move and had to be abandoned. Thus, only the



The Old Synagogue in 1960



Moving in December, 1969

second and third floors, comprising the sanctuary and balcony levels, were moved to the northeast corner of Third and G Streets, NW where it stands today. Sometime in the Fall, it will begin its final journey.

Though moving an entire building may seem like a feat made possible only by modern technology, transplanting buildings has actually been common throughout US history. The log houses of early settlers could easily be disassembled, moved, and reassembled log by log. It was not uncommon for an established settler to decide to build a new home and sell his old one to a

newcomer who would take the old structure away, leaving the property open for the new home. Entire cities were built to be moved early on as people began to build their homes before the parcels of land had been purchased. Everyone had to be prepared to move a home on a few weeks' notice in the event that the land where the house now stood could not be secured.

In the mid-19th and early 20th centuries, large frame houses replaced log cabins and other simple structures. Technology, however, kept pace so moving even larger houses remained fairly common. Photographs of Dawson City in the Canadian Yukon show houses that seemed to have disappeared from one year to the next, but then show up in other pictures in other locations in the town. Three houses on 8th Street SE near Eastern Market are said to have been moved from Lincoln Park to their current locations sometime after the Civil War. The first Little Girl Scout House was originally built behind the White House but President Hoover's wife, Lou Henry Hoover, paid to have it moved to 1750 New York Avenue in 1928. Some houses in Washington were built elsewhere, disassembled, and then moved. The Lindens in Kalorama, perhaps the oldest standing house in D.C., was built in 1754 near Marblehead, Massachusetts. It was purchased in 1934 by George and Miriam Hubbard who had it disassembled, placed in six freight train cars, and moved to Washington where it was reassembled.



Moving the Little Girl Scout House



The Lindens

Whole cities have been moved in more modern times. Parks Canada moved or lifted nine historic buildings in Dawson City in the 1980s to preserve them. Even more impressive, the Swedish government is moving the entire Arctic Circle town of Karuna and its 20,000 residents to a new location two miles away because the extensive web of iron mines beneath the town are making the ground collapse. Homes, offices, stores, and schools will be all moved during the

next two decades. More than six hundred million dollars has already been committed to the move and more will be spent before it is completed. You can read about it at



The Arctic Circle town of Karuna, Sweden



The Karuna Church

<http://gizmodo.com/how-engineers-are-moving-an-entire-town-two-miles-away-1552112299> or view a video at <https://www.youtube.com/watch?v=WKvqJ05AsPY>

The invention of the hydraulic jack by Richard Dudgeon in the 1850s improved the process of moving buildings. The hydraulic jack slowly replaced the screw jack which had been in use until that time. The hydraulic jack made it possible to move larger buildings over greater distances with more complex topography. One particularly impressive move made possible by advancing technology was the relocation of Stiner's General Store in the Tennessee Valley. The store had to be moved when the Norris Dam was built in the 1930s. Using hydraulic jacks and wagons, the store was moved two miles with everything still in place, neither tied down nor boxed. The only thing to fall during the move was a can of potted meat. The move took seven days – and the store stayed open the entire time! When officials decided to widen the streets in Chicago in 1928, Our Lady of Lourdes Catholic Church was threatened with



Our Lady of Lourdes Church

destruction. Rather than see its church destroyed, the parishioners decided to move it across the street. Although it moved only 300 feet, it was a colossal endeavor. The Church measured one hundred feet by one hundred and

seventy-five feet and weighed more than nine thousand tons. One hundred and fifty men were needed to move the Church with all its contents in place, and then reorient the direction of the nave ninety degrees. You can watch a video of the move at

<https://www.youtube.com/watch?v=OwKJ8YPn1RM>

Today, with the help of a few basic technologies, moving a building is a relatively straightforward affair in concept -- albeit a somewhat complex one to execute. To prepare the building, everything has to be cleaned out of the basement or crawl space beneath it and all its utilities must be disconnected. All of the fixtures have already been removed from the Adas Israel Synagogue, including its elaborate chandelier and its three historical pews – one thought to



Removing the Chandelier

be a women's pew from the balcony. Trees and plants directly adjacent to the building are being removed and the ground is being leveled to provide a smooth transit. You can read more about the removal of the fixtures at <https://www.jhsgw.org/blog/major-building-updates>

Once the building is prepped, the next step is to create space for support beams and hydraulic jacks beneath the structure. Because the building, even in its restored state, is old and fragile, moving it safely is critical. Because the Adas Israel foundation is still intact, workers will dig a six-foot wide trench around the building and cut into the masonry perimeter walls so that cribbing can be built up beneath the building. Nuts will be removed from the bolts that connect the structure to the concrete foundation so that the building will lift freely off the foundation when it is raised. Cribbing piles are set in the space created around and under the foundation. Three main steel support beams that run the length of the building will be inserted under the building to rest on the cribbing piles. Sixteen steel cross beams are then inserted on top of the main beams and secured with three-inch C clamps. Several smaller beams, called needle beams, are set across the cross beams to provide additional support. Support walls are placed inside the building on the needle and cross beams to prevent the building from racking, or collapsing into itself. The cupola at the back of the Synagogue will be secured to the building with high-strength wire rope during the move. The Adas Israel Synagogue measures twenty-five feet by sixty feet and weighs two hundred and seventy tons. The crib that will carry it measures forty feet by seventy feet. When the operation begins in the Fall, I will provide pictures so that you can actually see how the beams and cribbing secure the building.

Once the beams are in place, hydraulic jacks attached to rollers will be placed between the cribbing piles. The jacks will then raise the building high enough to permit mobility. The building will then be pulled by a truck, rolled off its foundation, and move about fifty feet west into 3rd Street. As it moves, the computerized jacks will automatically adjust their height as the building moves to coincide with the slope of the road surface. Generally, the maximum speed of a moving unit is about six inches per second. The exact speed for the Synagogue move has yet to be determined, but it will probably be closer to six inches per minute. Once at the temporary site, the wheels and jacks will be removed and the building will be placed on another set of cribbing. There may be some delays but the entire process should be over in about four to six hours. In case you were wondering, the move will be coordinated by Wolfe House Builders and Movers. Their website shows an amazing array of structures they have moved.

<https://www.wolfehousebuildingmovers.com/> Once the Synagogue is moved, it will remain at its temporary location until the site for its permanent home and for the new Jewish Historical Society Headquarters is fully prepared. Adas Israel will then begin its final journey, this time to

the corner of 3rd and F Streets, NW, right across the street from the Holy Rosary Catholic parish. Once in place, the East End will gain a visual embodiment of the Hebrew Scriptures and the Christian Bible standing side by side.

Today, the notion of moving buildings, especially houses of worship may seem strange. But in the Hebrew tradition, a moveable Tabernacle is at the root of the faith. The first Jewish building of which we are aware was commanded by God in Exodus, Chapter 25, verse 8: “They shall make a sanctuary for me so that I may dwell among them.” בְּתוֹכְכֶם וְשָׁכַנְתִּי מִקִּדְשׁ לִי וְעָשׂוּ. The original Tabernacle was built to wander, to be erected and dismantled swiftly as circumstances demanded. But it served the Israelites as a center of worship and study for five hundred years. “It accompanied them as they wandered in the desert; it stood in Gilgal; it stood in Shiloh; and it stood in Nob and Gibeon.” It ceased to exist only after the first Temple was built in Jerusalem. But the centrality of the Tabernacle to the faith remains. God’s command for the Tabernacle reflected God’s purpose, “that I may dwell among them.” Buildings may move and the locations of congregations may come and go, as have those of the three main early Jewish congregations in the East End; but the covenant of people with their God remains inviolable. The wandering of Adas Israel Synagogue conjures images and emotions that run deep into the hearts and souls of believers and non-believers alike. It tells the story of an immigrant community that came to Washington to share in the freedoms America offered, to thrive and to abandon centuries of wandering and suffering. But the journey of Adas Israel also reaches deeper into antiquity, touching the foundations of the Tabernacle, touching the source of faith, and reaffirming a timeless covenant.

Wally Mlyniec

SOURCES

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