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ARCHITECTURE

FOURTH QUARTER 2015



Ehlinger & Associates extends Seasons Greetings to all of our friends who receive the newsletter. Merry Christmas, Happy Hanukkah, and Happy New Year.



Chapel of the Flagellation (2nd Station of the Cross), Franciscan Monastery, Jerusalem, Israel © 2015 Lekoff, Ehlinger

Chapel of the Flagellation

The Chapel of the Flagellation is located in a Franciscan Monastery (Roman Catholic) on the Via Dolorosa (The Way of Sorrow or Grief) in the Muslim Quarter of Old Jerusalem, which is north of the Fortress Antonia (the so-called Temple Mount). This statement is meant to tell the reader that Jerusalem is full of mistaken traditions, of which this chapel is a major one.

The Chapel is located at the 2nd Station of the Cross, where Jesus was believed to be scourged immediately before He took

up the cross on the Via Dolorosa. The Via Dolorosa commemorates the journey of Christ from His judgement and condemnation by Pontius Pilate, the Roman Governor, to the scourging, and He taking the cross ultimately to his crucifixion and Golgotha (the place of the skulls), and several other stations of the Way of the Cross which are enshrined in the Church of the Holy Sepulchre. In the time of the Crusaders, this spot was thought to be where the pavement was upon which Pilate judged and condemned Jesus to death, based upon the presence of Roman paving stones. Modern archaeology however, tells us that these

stones were actually part of the east Roman Forum, one of two forums at the time of Christ. The site of this Forum had been previously an open air pool, the Strouthian Pool which was constructed by the Hasmidians. We know all this from Flavius Josephus, a Roman historian at the time who was also raised as a Jew, that

mentioned the Forum as being adjacent to the Fortress Antonia in the first century.

We also now know from Josephus that Pilate, the Roman Governor, held his hearings and made his judgements in Herod's Palace at the other end (south) of the Fortress Antonia at the Western Hill, what is now at the Jaffa Gate, and while the way that Jesus followed may well have wound up at the Golgotha enshrined in the Church of the Holy Sepulchre, the other "stations" took place at other locations. To further confuse matters,

there were multiple "golgothas" during the first century as well.

It's interesting to note that the Romans under Hadrian in ca. 70 AD forcibly emigrated all of the Jews from Israel in the diaspora, and destroyed the Temple completely. Remember Jesus reportedly predicted that "not a stone will remain standing after I am gone". Those non-Jews that remained had little interest in Jewish landmarks or history. When the Crusades began 9 centuries later, there were no historians or residents who recalled much of anything in the first century.

The site of the Chapel began as a church about that time based upon the erroneous information, and was destroyed and rebuilt several times. The present facility was a remodeling / replacement for one built in 1839 by Duke Maximilian Joseph of Bavaria over the remains of the Crusader pilgrim shrine. The complex was given to the Franciscans by Ibrahim Pasha of Egypt in the 19th Century. The present church was built in 1929 as a complete reconstruction in Byzantine style by the Architect Antonio Barluzzi. The interior is a series of plastered masonry groin vaults with a single aisle, and several significant stained glass windows.

Another totally erroneous tradition that began about the time of the Crusades and intensified in the 19th century was that the Jewish Temple resided upon what is now called the "Temple Mount". Devout Jews go to the western wall (the "Wailing Wall") to pray today, and to pray for the rebuilding of the Temple. We know again from Josephus that the "Temple Mount" is actually the base of the Fortress Antonia.

The Romans built a large masonry base of approximately 34 acres of this man-made hill to dominate the city and the populace. The actual Jewish Temple was 600' due south of it and connected to it by a pair of masonry arcades which allowed the 10,000 Roman soldiers garrisoned there complete dominance over the often rebellious Jews - the whole reason the fortress had been built to begin with. On top of this base were barracks, Roman temples to Roman gods,

warehouses and administrative buildings. The four corners of the base had towers built, and the one on the southeast corner was taller for observations of the Jewish Temple courtyard that it overlooked. The Jewish Temple was built over the Gihon spring, a constant source of water needed to wash away the blood from the animal sacrifices. The spring and drainage channels are still there as are basement rooms of the Temple that were well below grade.

The Romans did the identical thing in Baalbek, at the lower end of the Bekaa Valley in Lebanon. They rebuilt the Temple of Baal, and built a fortress on a platform just like the one in Jerusalem to overlook it, with barracks, temples, warehouses, and administrative buildings, where they could intimidate and manage the populace below.

Designing for Doomsday

While not necessarily a design ‘trend’, creating fortified structures for individuals has been a steadily growing field over the past 65 years, resulting in some unique, if wildly expensive architecture. Moving beyond tornado shelters and panic rooms, there are residences built to survive nuclear blasts and fall out, EMP blasts, or to withstand months or years of siege, all for the one, extremely phobic, individual (and their select few).

Surviving a Nuclear Blast The most likely way for a structure to survive an initial nuclear blast is to be underground. Even if underground, surviving the shockwave is a big engineering consideration, so most individual nuclear bunkers tend to be built as far away from potential bombing targets as possible, to minimize construction costs. Just taking a look at some of the government nuclear bunker installations gives an idea of the amount of concrete and steel necessary for even a chance of surviving a direct blast: Cheyenne Mountain, or the Greenbrier Resort Bunker, for example.



Entrance to the Cheyenne Mountain Military Complex.

To avoid the extra structure, most private bunkers tend to be built in more remote areas, and a popular tactic has been the re-use of abandoned cold-war era nuclear missile silos. Dug deep into the ground, already protected with blast shields at their entrances, converting them to living quarters is a much less daunting prospect than starting from scratch, but still quite expensive.



Converted Missile Silo

Radiation is relatively simple to protect against, particularly for a buried structure - just a couple of feet of soil is enough to dampen radiation from fall-out to safe levels, and

just a foot or so of solid concrete would accomplish the same task above ground.

The more difficult prospect is keeping radioactive and toxic particles out of the air supply to the bunker, which becomes a mechanical engineering challenge, but a few simple tricks can minimize this challenge. Because ‘fallout’ consists of radioactive particles, they tend to be heavier than regular dust in the air, so having an oversized air intake shaft, with an added a 90 degree turn or two solves most of the problem, allowing the fallout to filter itself out of the air via gravity. Standard HEPA air filters take care of the rest.

Treating contaminated water is a trickier prospect, as the method to treat water varies considerably depending on the problem with the water. To counter this, most bunkers are also equipped with large underground water tanks, in order to simply

wait out the contamination. The available safe water is the limiting factor of time in the ‘siege mode’ of any bunker.

Electromagnetic Pulse (EMP) One of the nasty side effects of a nuclear blast is the EMP wave that accompanies it, creating a surge of electricity in anything conductive, which fries electronic components and damages electrical equipment, whether they are on or off. For the buried nuclear bunker, protecting against an EMP is relatively simple - isolate any metal connection to the surface, as an EMP doesn’t penetrate into the ground.

Above ground, protection must be provided by a ‘faraday cage’, consisting of a cage of metal or metal skin, with insulation on the inside. The metal surround catches the surge from the EMP and grounds it, protecting the interior.

With both tactics, any electrical generation will have to be provided within the EMP protected structure, as running a wire from the exterior compromises the protection. This adds to the air requirements, particularly with combustion generated electricity, but electricity is a requirement of any current bunker system, so it has to be accounted for.

Less Expensive Option There are any number of bunker systems available, and on the low end, a simple buried system will run about \$60,000, and house 2-4 people for a couple of weeks.



\$60k metal tube bunker, for the modest income survivalist.

Is It Worth It? This is a question that can only be answered by the value of one’s ‘peace of mind’ against the improbable, but from a practical standpoint, there are several problems that a bunker, or any defensive position, can never overcome. Strength - there’s always a larger weapon than it was built for. Siege - there’s always a longer siege than it can stock for. Psychology - complete isolation of a small group isn’t mentally healthy. Escape - limited access.