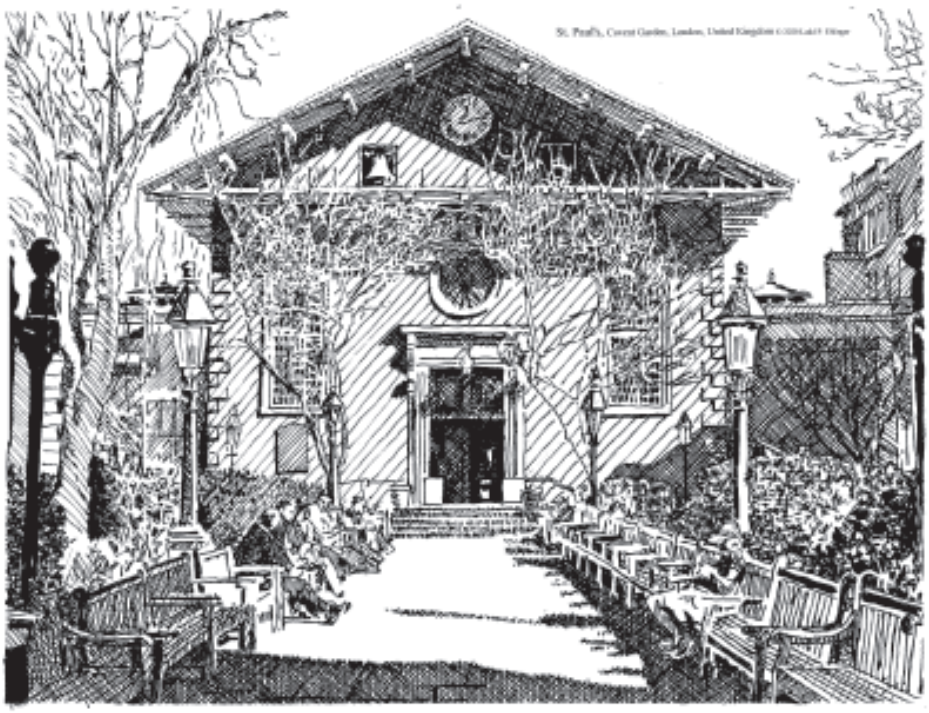
ARCHITECTURE

EHLINGER & ASSOCIATES **SECOND QUARTER 2020**



St. Paul's, Covent Garden

The west front of St. Paul's in Covent Garden, London, United Kingdom is the subject in the print of a sketch by Ladd P. Ehlinger, AIA. The 4th Earl of Bedford received permission from King Charles I in 1630 to demolish buildings in an area north of Strand that he owned and to redevelop it into Covent Garden Piazza, the first public square with terraced residences arcaded below for a market area in London. There also was a theater later on in the development. St. Paul's is on the west end of the Piazza. The design commission for Covent Garden and the church was given to the architect Inigo Jones by the Earl of Bedford, who in typical developer fashion, cautioned Inigo Jones to design a simple church "not much better than a barn". Jones replied "Then you shall have the handsomest barn in England."

St. Paul's was completed in 1632 (the year the most famous English architect Sir Christopher Wren was born), and thanks to Inigo Jones really is a very handsome building in the Renaissance style, executed in the simplest means possible in classical proportions. What is actually seen today is a rebuilding that took place at the hand of architect Thomas Hardwick (1752-1829) after it was burned in 1795. The west facade was retained along with the other outer masonry walls north & south, but the east facade portico was totally rebuilt.

Inigo Jones was one of the most important figures in the architecture of England in the 17th Century as he single handedly initiated and advocated the Renaissance style in England. The son of a cloth maker, nothing is known of his early life and education. In the early 1600s, he was employed by Queen Anne, wife of James I, to provide costumes and settings for a bal masqué at court, something he continued to do even after he began designing buildings. His first known building was the New Exchange in the Strand in London done in 1608. He made several trips to Italy to study Classical and Roman architecture, and the Italian Renaissance buildings, particularly those designed by Andrea Palladio. St. Paul's was obviously inspired by Palladio. After one of his trips to Italy in 1613, he was appointed surveyor to the King, a position he held until 1643 when there was a civil war. Jones died in 1652.

The east front of St. Paul's is actually facing the Piazza and has a four columned temple type portico that is more elaborate than the west facade of the sketch. This facade is the one most often depicted in architectural history text books, yet I think it lacks the simple dignity of the west facade shown in the sketch. There are some historians that believe that Inigo Jones intended to reverse the normal order of placement of the altar on the east end to the west end, and ran afoul of Church of England officials who refused to allow it. Thus the entrance to St. Pauls is on the plain west front through the grave yard, and the altar is on the traditional east end.

The interior of St. Paul's is equally as simple. A single raised step at the east end is the demarcation of the Chancel area from the Nave of the church. There were at one time balconies added on three sides, but in various re-buildings over the centuries, this has been reduced to one for the choir in the rear next to the two adjunct rooms on either side. There are two rows of columns each centered on the pews. The net visual appearance is that of a unified single space with very pleasant proportions as per the exterior.

St. Paul's is also known as "The Actor's Church" as the actors that played in the Theater Royal nearby, and later the Covent Garden Theater (now Royal Opera House) that opened in 1723 frequented the church. Their participation also served to attract various artists of other disciplines as well. Some productions have been presented in the south portico of the church also. Various actors and artists were initially buried at St. Paul's, though since 1852 there have been no burials. There are wall plaque memorials in the church to many famous 20th century acting personalities in addition to 17th and 18th century figures, such as Sir Charlie Chaplin, Sir Noel Coward, Gracie Fields, Stanley Holloway, Boris Karloff (the monster in Frankenstein movies), and Vivien Leigh (Scarlett O'Hara in "Gone With the Wind"). *Ladd P. Ehlinger*

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THE ASCLEPEION - Ancient "Hospital"

To date over 300 ancient asclepeion Greek temples have been discovered. These temple types were named after Asclepius, who was a doctor god known for his healing powers. These 'healing' temples were usually located in remote places: forest, mountains, along streams.

By 350 BC, the popular design of these facilities included special spaces where healing under the two main courses of treatment were followed:

1. Purification: hence baths were built or local spas were used.
2. Healing Dormitories for the spiritual needs of the patient for 'temple sleep' or *incubatio* treatments.

Cleansing baths and purges, cleansing diets, visits by snakes, dogs, or potions mixed with opium helped the *incubatio.* The *incubatio* or incubation period had a bit of a different meaning than today.

During incubation, the patient, in a controlled space, was induced to have dreams to be interpreted by a Priest or physician. So the spiritual and the medical healing was all in one.

These Greek healing temples became the home of many future physicians. Reportedly Hippocrates practiced in at a temple in Kos, Greece, before he became physician to Marcus Aurelius.

Non-venomous snakes were kept in the asclepeion and played an important role in the healing activities. A staff with a snake serves as a symbol of medicine from ancient times and was called the Rod of Asclepius.The Caduceus two snake staff symbol used in medicine today was a Roman adaptation of the staff carried by the Greek god, Hermes. There is an asclepeion located on the southern slopes of the Acropolis of Athens. Others are in Kos and at Epidaurus.

Epidaurus, a UNESCO World Heritage Site, has some of the finest 4th century BCE Hellenic architecture. As water was so important to temple healing, one finds amazingly designed large-scale water supply and sewerage systems.

The Rod of Asclepius
Dana S. Ehlinger

DOES ALUMINIUM RUST?

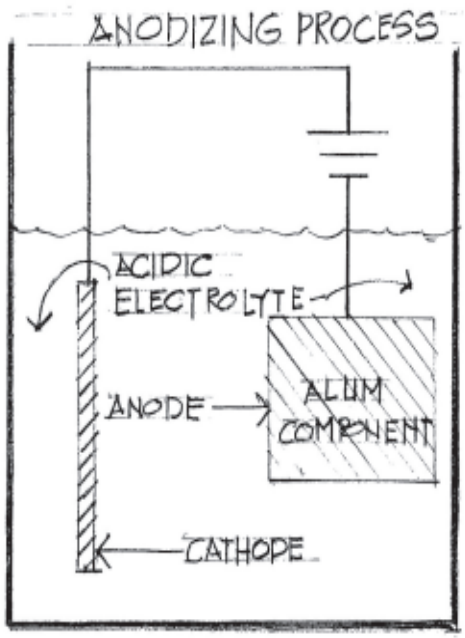
This becomes an important issue when considering choice of metal for insulated metal or single-skin metal panels. So many choices: Copper, Zinc, Aluminum, Galvanized Steel, or Composite. All variations and combinations of materials are available.

But the question is does aluminum rust?

If building a new facility with metal siding one wants to consider its planned life span, its cost, and its future maintenance. Among all the other considerations - so it is a complicated issue. Let's make it simple.

No!

Aluminum corrodes by *oxidation.* Rust is a similar type of corrosion by oxidation. Rust is the name for oxidation when it occurs on iron or steel surfaces. Newly formed or unoxidized steel or iron reacts with water and the oxygen in air, instantly forming a layer or film of ferrous oxide (rust) on the surface exposed to the oxygen. Newly formed or unoxidized aluminum reacts with water and the oxygen in air, instantly forming a layer or film of aluminum oxide on the surface exposed to the oxygen. This oxidation corrosion forms a protective barrier over the underlying aluminum, unlike most rust layers. Rust layers typically are porous enough to allow additional water and air to penetrate the rust and cause additional rust until the entire component is transformed into rust.



Aluminum in an acidic solution with other metals may be electrolytically transferred as a film to the surface of an aluminum component thereby protecting the surface with a colored oxidized film of aluminum with other metals of a decorative as well as protective nature. This process is called anodization, and the film layer is chemically described as AL_2O_3.

In comparison to ferrous metals (iron, steel) the aluminum oxidative coating is not much greater in volume than the original unoxidized aluminum, whereas rust is about seven times greater in volume than the unoxidized steel or iron.

There is a type of steel alloy called "Cor-Ten" steel where the rust layer functions more like the protective oxidative layer or film that forms on aluminum surfaces. Cor-Ten steel is frequently referred to as "weathering steel" because of this ability of the rust to form a film that is dense enough to prevent further rust. Cor-Ten steel is frequently used for bridge members exposed to the weather that will be difficult to re-paint on a regular basis. The protective rust layer is still active though, and presents a staining problem on adjacent or supporting reinforced concrete surfaces. To protect against this, areas of the member are usually painted near their concrete supports to prevent rust staining.

Among all metals, aluminum has a fairly low corrosion rate. The Noble Metals have the greatest resistance to corrosion and are: ruthenium (Ru), rhodium (Rh), palladium (Pd), silver (Ag), osmium (Os), iridium (Ir), platinum (Pt), and gold (Au). It is known that contact with dissimilar metals can affect aluminum (galvanic corrosion). Galvanic corrosion can affect aluminium when it is physically or through an electrolyte connected to any metal that has lesser reactivity compared to aluminium

Today, manufacturers of metal panels use alloys and coatings of paint and electrolytically applied powder particles to protect from corrosion. Aluminum has the advantage of the anodization coating process as well, though it should be pointed out that anodization is vulnerable to insult by cleaning products containing trisodium phosphate and or chlorine. The aluminum component is typically painted with a zinc chromate paint to provide a galvanic barrier when the aluminum component is attached to another, more reactive metal, in order to galvanically isolate the aluminum.

Care should be taken to avoid these situations to protect the longevity of the aluminum building components and prevent future maintenance problems.

Dana S. Ehlinger