

# Philately, Civil Engineering, and Karl Terzaghi

By Fred H. Kulhawy, F.ASCE, P.E., G.E. and Mohamad H. Hussein, M.ASCE, P.E., APS

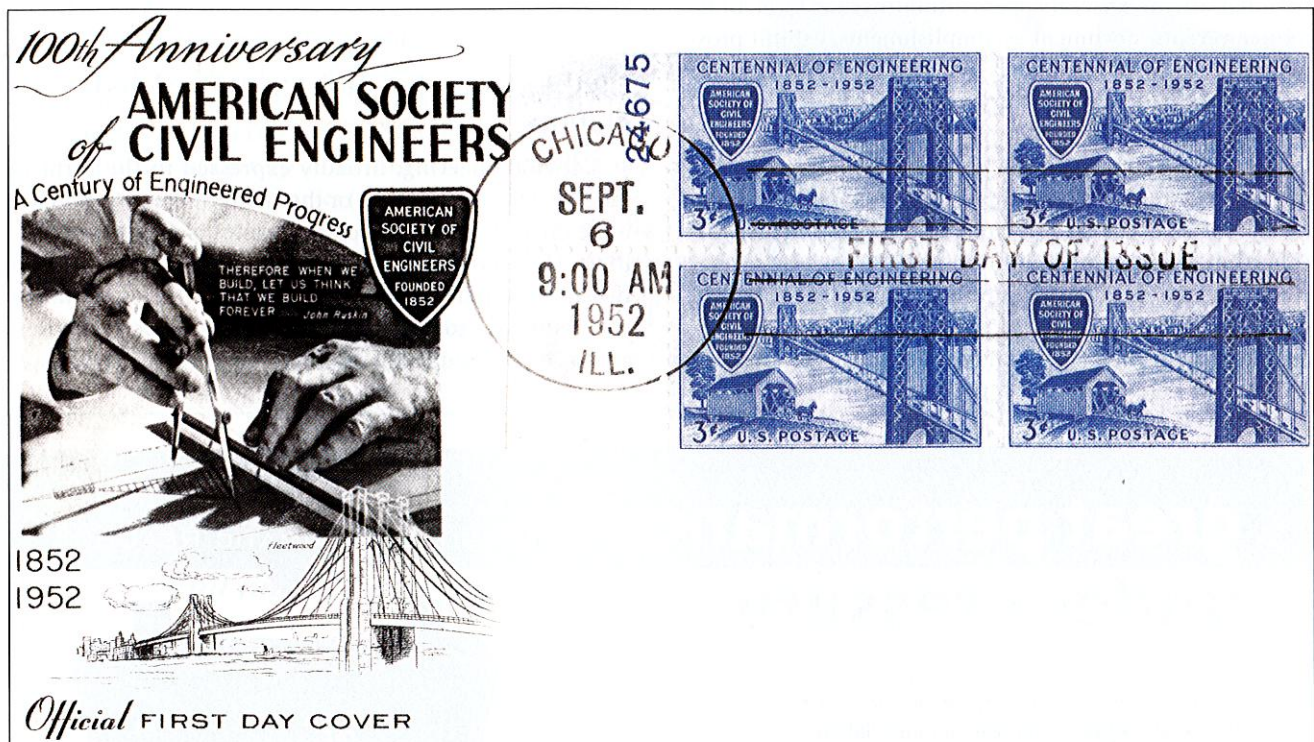


Figure 1. "Centennial of Engineering" stamp honoring the 100th anniversary of ASCE.

Postage stamps. The thought of them conjures up many different things to many different people. A business person complains of their increasing cost. A five-year-old neophyte collector marvels at their shapes and colors. A high stakes professional philatelist seeks out the rarities to make the "perfect" collection. In fact, the famous 1855 Swedish stamp, the "Treskilling Yellow," is perhaps the most valuable thing in the world per unit weight. Using its 1996 sales price, it is worth about U.S. \$40 billion per pound! Postage stamps are also a part of both civil and geotechnical engineering, as we'll describe.

## Philately...The Collection and Study of Stamps and Related Postal Materials

### Historical Notes

Ancient civilizations in China, Egypt, Mesopotamia, and other locales developed functional postal and written messaging systems for official and military use. Later, the Romans

instituted a sophisticated system for efficient delivery of governmental and civilian mail throughout their vast empire. In more recent times, the first "modern" postal route in the Western World was established in 1533 in England during the reign of King Henry VIII. In the mid-1600s, a trans-Atlantic mail link was established between the colonies in North America and England. In 1775, the Continental Congress named Benjamin Franklin as the first Postmaster General. In 1789, George Washington appointed Samuel Osgood as the first United States Postmaster General.

Sir Rowland Hill, the English schoolteacher, inventor, and postal reformer, was the first to suggest the use of a standard prepaid postage stamp for delivery of mail according to weight. In 1839, he proposed the use of a penny stamp for the delivery of a letter weighing up to one ounce anywhere in the Kingdom. Subsequently, on May 6, 1840, Great Britain issued the first official stamp in the world. Depicting Queen Victoria, it is commonly called the "Penny Black."

In the U.S., the first postage stamps were issued on July 1, 1847 depicting images of George Washington and Benjamin Franklin. On April 3, 1860, the Pony Express was initiated, with ten-day mail delivery service between St. Joseph, MO and Sacramento, CA. Today, perhaps billions of stamps are used daily for commercial and personal mail deliveries worldwide.

## A Portrait of Modern Stamps

Modern stamps from all nations employ vibrant designs to demonstrate their country's independence or sovereignty, showcase local natural beauty, express national artistic taste, display cultural heritage, celebrate jubilant events, document accomplishments, exhibit prosperity, honor national heroes and distinguished citizens, and advertise all that a country's citizens feel is wonderful about themselves. In addition to their function as utilitarian objects—essential to modern commercial and private written communications—postage stamps are miniature masterpieces of art and documentary history, worthy of collection, study, and admiration.

Many different types of stamps are issued for a variety of uses and purposes. The most common stamps in the U.S. are the small, regular (or definitive) issues that are intended

for everyday postal use, sold over a long period of time, and printed in very large quantities (typically many billions). Most countries also issue the larger and more colorful commemorative stamps, which feature a special design commemorating an event or honoring a person or subject. These stamps are sold over a shorter period of time (typically several months) and are printed in smaller quantities (typically 10 to 150 million in the U.S.). And then there was the 1993 Elvis commemorative stamp, which set the record with 517 million printed.

In addition to regular and commemorative issues, a variety of special purpose stamps have been created. Some types are still used. Among these are airmail, special delivery, postage due, official, and parcel post stamps.

## Civil Engineering and ASCE Depicted in Stamps

Civil Engineering, broadly expressed in the form of infrastructure, technology, or the environment, is a popular topic often depicted on postage stamps around the world. In the U.S., however, its popularity is somewhat limited. Of the approximately 3,800 regular and commemorative stamps issued to date, fewer than 200 depict activities, events, or issues directly related to engineering, and, fewer

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than 10 actually use the words "engineer" or "engineering." The majority of this group relate to civil engineering topics. We are also very fortunate that, on September 6, 1952, the U.S. Postal Service issued a commemorative "Centennial of Engineering" stamp (Figure 1. shows the First Day of Issue cover) in honor of the 100th anniversary of the founding of ASCE. This postage stamp features the ASCE logo, a covered timber bridge, and the George Washington Bridge in its original, single-deck version. No other engineering society has been so honored!

### Karl Terzaghi

On October 3, 1983, the Austrian Postal Service issued a commemorative postage stamp to mark the centenary of Karl Terzaghi's birth. (His actual birthday was October 2, but since that day fell on a Sunday, the following Monday was designated as the First Day of Issue.) For the occasion, a special post office was set up at the Institute for Foundation Engineering and Soil Mechanics (which Terzaghi founded in 1929) at the Technical University in Vienna. A total of 3.5 million stamps were printed in sheets of 50. Because of the great interest in this commemorative stamp, all issues quickly sold out. This 35-mm square stamp (Figure 2.) was intaglio printed with aquamarine ink and depicted a por-



Figure 2. Commemorative stamp marking centenary of Karl Terzaghi's birth.

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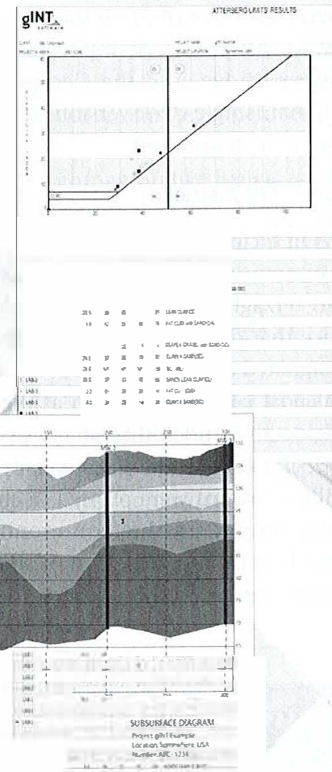
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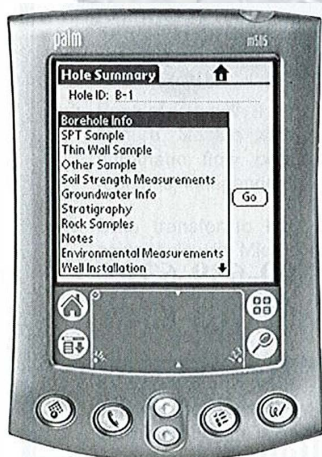
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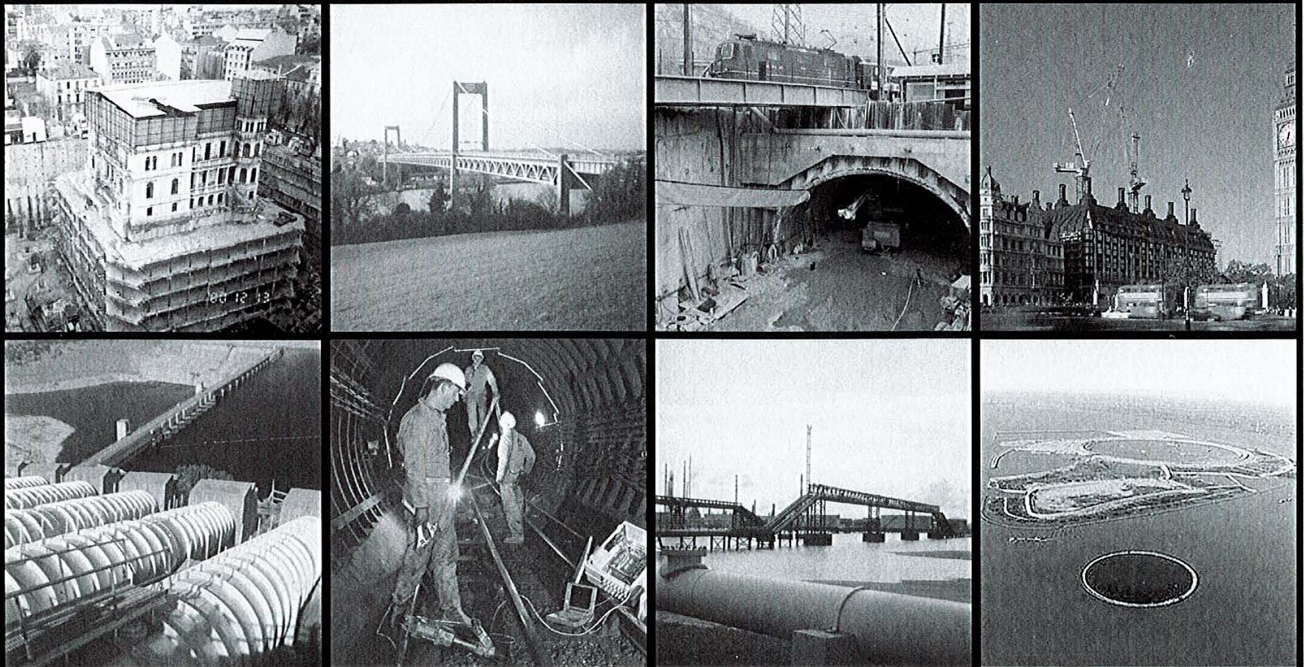


Figure 3. Terzaghi First Day of Issue commemorative envelope.

trait of Terzaghi engraved from an official photo taken during his period of activity in Vienna during the 1930s. Across the top was printed "KARL VON TERZAGHI-1883-1963." In the upper right corner, a loaded footing is shown with soil stress distribution contours, which is surrounded by the phrase "GRUNDBAU UND BODEN MECHANIK," which translates to "Foundation Engineering and Soil Mechanics." The denomination "S3" (3 shillings, or about 25 cents at the time) and the country name "REPUBLIK OSTERREICH" (Austrian Republic) also appear on the stamp.

When a commemorative stamp is issued, there is usually some fanfare to note the event, such as the creation of the spe-

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Figure 4. Terzaghi First Day of Issue commemorative sheet.

cial post office previously mentioned and the inevitable social activities that accompany it. Normally, a special first day cover (envelope) is designed, and a special cancellation of the stamp is made, noting "First Day of Issue." (Both are shown in Figure 1. for the 1952 ASCE stamp.) At times, more than one version of the first day cover is designed or special first-day postcards are designed. Sometimes a special cancellation is developed or more than one version of the cancellation is developed. Often special commemorative sheets are created or multiple cancellations are made in multiple cities to honor the event. In the case of the Terzaghi stamp, *all of these* things happened.

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Figure 3. shows the "basic" first day cover. It shows the stamp and a simple visual of Terzaghi in his later years, noting the First Day of Issue designation. Of particular interest are the cancellations. The basic one issued by the postal authorities is the upper cancellation, which shows a foundation, the underlying bearing capacity mechanism manifested by slip-line fields, and a tunnel beneath. This was intended to portray Terzaghi's wide-ranging activities and close links to practice. The lower cancellation was developed by the Philatelic Club in Graz in collaboration with the Geotechnical Institute at the Technical University in Graz. This "semi-private" cancellation shows the oedometer originally developed by Terzaghi.

Figure 4. portrays perhaps the most interesting commemorative sheet of all. Supposedly, only 25 of these exist. This very special philatelic item traces Terzaghi's academic career from his undergraduate days at Graz to his final position at Harvard, along with both cancellations and the signatures of the designers of the stamp and special postmarks. This well-adorned sheet "tells it all."

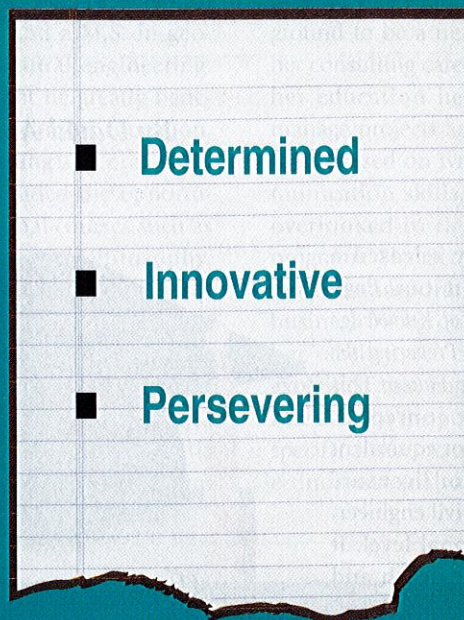
While it is great for geotechs to have this Terzaghi stamp, it is disconcerting that no U.S. postage stamp has been issued to commemorate any geotechnical engineer.

### Some Closing Thoughts

Unfortunately, engineering and the entire construction industry are under-represented on U.S. postage stamps, as are all engineers. The U.S. has produced various "Famous Americans" series over the years, ranging widely from authors to composers to movie stars and even to movie monsters. Why shouldn't we have a "Famous Engineers" issue? Perhaps ASCE should lobby the U.S. Postal Service on this matter. Anything is possible if we work at it together! ○

*Fred H. Kulhawy is a professor in the School of Civil and Environmental Engineering at Cornell University,*

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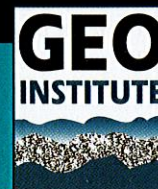


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