Art historian Peter Christensen harnesses technology to find the roots of globalization in the Ottoman Empire's railway.

Railways and Empires

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MOVING FORWARD: The railway was the Ottoman Empire's most significant modernization project, and came near the empire's end.

TRACKING BOUNDARIES: The Ottoman Railway traversed lands that are now in Syria, Lebanon, Turkey, Iraq, Israel, and Greece. "As recently as 100 years ago, the borders of these now geopolitical hot spots were completely different—and this railway was meant to connect these disparate lands," says Christensen, who argues that structures of the immense 19thcentury civil works project show a melding of East and West.

LABORING: Indian prisoners of war working on the Baghdad Railway, 1916 (below). Station designs, like the Adana station (bottom, left) and the Medina terminus for the Hejaz Railway (bottom, right), reflect laborers' decisions.



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SCENE-SETTING: Deutsche Bank commissioned German military artist Theodor Rocholl to create an album of 28 watercolors commemorating the Anatolian railway, a project affected by tension between "heroic Ottoman impulses" and "more romantic German" expectations for the endeavor.



LANDSCAPE VIEW: Site-scouting photos "also comprised loose panoramas, offering vivid views of the cities as 'as found' landscapes," like this image (above) of Afyonkarahisar, in western Turkey, Christensen writes.

ook at a map of roads or railroad tracks—the winding lines suffuse the terrain like veins in a body.

That's no accident, because "they are the stuff of life," writes Peter Christensen, an assistant professor of art history.

Trained as an architect as well as a scholar, Christensen is the author of a new book—*Germany and the Ottoman Railways: Art, Empire, and Infrastructure* (Yale, 2017)—that considers globalization through the lens of an immense civ-

il works project that spanned cultures and borders in the late 19th and early 20th centuries.

While buildings may be the glamorous figures in architecture, "infrastructure is what modernizes us," Christensen says. And he argues that it deserves a place in architectural history not just as technology, but also as art.

"Infrastructures make empires," he declares on the book's first page. "The economic, social, and cultural systems of empires are guided by and given form and purpose through canals, bridges, tunnels, ports, and, perhaps most importantly, railways."

And the construction of infrastructure is, at many levels, a collaborative one, crossing boundaries to take advantage of expertise and finances, and reliant on the vision not just of architects and engineers, but of local laborers, too. "There are multiple layers of authorship involved in the creation of buildings and all the other objects that go into engineering a railway network," says Christensen, who has also studied a similar effort in western Canada.

Conceived of by the Ottoman sultan, the railways of the Ottoman Empire—which encompassed the lands of what are now Syria, Lebanon, Turkey, Iraq, Israel, and Greece—were largely a German project in engineering, materials, and finances. But the relationship between the two empires was always an ambiguous one. While the German Empire was a rising power during the Ottoman Empire's decline, and

THEODOR ROCHOLL, KARASU GORGE, CA. 1909. WATERCOLOR ON BOARD. HISTORISCHES INSTITUT DER DEUTSCHEN BANK, FRANKFURT (LEFT); GUILLAUME GUSTAVE BERGGREN, PANORAMA OF AFYONKARAHISER, CA. 1890. NIEDERSÄCHSISCHES LANDESARCHIV, WOLFENBÜTTEL (TOP)







RAIL ART: Rocholl also depicted the people who worked around the railways, including an Anatolian railway attendant (left) and a dealer of Meerschaum pipes (above), who found his market expanded by the railroad.

THEODOR ROCHOLL, RAILWAY ATTENDANT OF THE ANATOLIAN RAILWAY, CA. 1909, WATERCOLOR ON BOARD (BOTTOM LEFT); MEERSCHAUM DEALER, CA. 1909, WATERCOLOR ON BOARD (BOTTOM RIGHT). HISTORISCHES INSTITUT DER DEUTSCHEN BANK, FRANKFURT.





the railway project was characterized by the international press as a colonial one, with Germany at the helm, the connection was more dynamic than antagonistic, Christensen argues.

He finds testament to the cross-cultural nature of the effort in material artifacts of the Ottoman railway, including train stations, maps, bridges, and monuments. German architects created standard designs for the railway stations based on the size of the towns' populations. But he didn't see such replication when he studied the stations that were actually built. Instead, he found that key elements of design the form of the windows, for instance, or the stone carving—were the handiwork of workers across the multicultural Ottoman Empire, laboring in different environmental conditions and drawing on their own cultural aesthetics.

"This is a moment that crystallizes globalization in architecture," Christensen says, "because styles are conflating freely, ideas and models of architecture are traveling and being changed."

His book is part of a larger project that also involves three-dimensional imaging using face-recognition software. He and his research team have used 3-D scanning to map precisely where the various Ottoman railway stations differ, zeroing in on the contributions of on-the-ground laborers, who typically figure little in architectural history. It's a technology that he's continuing to develop—with current collaborations at the Rochester Museum and Science Center and the Museum of Modern Art—to yield a tool he hopes will be broadly useful to architectural and art historians.

Christensen's book is also the product of a low-tech but time-honored skill for art historians: scouring the archives. Few of the images that fill his book have been published before, but Christensen says the importance of the Ottoman railway continues to reverberate in contemporary life. "As recently as 100 years ago, the borders of these now geopolitical hot spots were completely different—and this railway was meant to connect these disparate lands," he says. "After World War I, the border between Syria and Turkey was made by the railway line—it was an arbitrary line in the proverbial sand.

"We live with the aftereffects of the creation of these networks to this day." **•**



GUILLAUME GUSTAVE BERGGREN, VIEW OF SULTAN HAN, AKSARAY, CA. 1893 (TOP LEFT), PHYRIGIAN LIONS IN THE COURTYARD OF THE KAL-HAN[E] IN KONYA, CA. 1893 (TOP CENTER). NIEDERSÄCHSISCHES LANDESARCHIV, WOLFENBÜTTEL





GUILLAUME GUSTAVE BERGGREN, VIEW OF THE ANATOLIAN RAILWAYS TUNNEL AT BEKDEMIR, CA. 1893. NIEDERSÄCHSISCHES LANDESARCHIV, WOLFENBÜTTEL (TOP RIGHT); LIBRARY OF CONGRESS, WASHINGTON, D.C. (BOTTOM) OFFICIAL VISIT: Kaiser Wilhelm visiting the Dome of the Rock, 1898. Located in Jerusalem, the shrine is a cultural landmark of Islamic architecture.