

Lucas Giordano: Engineering is in Our Blood

Lucas Giordano comes from a family of engineers. He is originally from Milan, Italy. Lucas' grandfather, Georgio, worked as an engineer for the Italian government



during a time of major economic growth. This period between 1950 and 1970 saw major improvement and expansion in the Italian *infrastructure*. After the end of



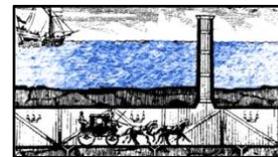
World War II, parts of Italy were in need of repair. Improvements in infrastructure meant that roads were fixed, bridges were built and buildings were repaired.

This period of economic success slowed in the early 1970s when Milan experienced a period of political conflict. During what are known as the Years of Lead, cities like Milan faced increases in street violence and political terrorism. In 1972, after economic growth slowed because of the violence, Lucas' grandfather moved his family to London, England. Lucas was two years old when the family relocated. Both of Lucas' parents worked as engineers for the British government. From an early age, Lucas dreamed of building bridges and buildings. He drew his inspiration from his love for classic Italian architecture as well as the modern architecture he saw everyday in London.

For several years, however, Lucas' experience as an engineer took him underground. In fact, it took him underwater. Lucas was employed as one of over 10,000 workers assigned to the Euro Tunnel project.

The project, which began in 1988, had the goal of connecting France to England. This connection would link the mainland of Western Europe to Great Britain by way of a tunnel that ran under the seabed of the English Channel. France and England, in particular, believed that joining the two countries would enhance their economic relationship as well as the relationship with other Western European countries.

The dream of connecting the mainland of Europe to Great Britain goes as far back as 1802. A French engineer by the name of Albert Mathieu



envisioned an underground tunnel that would allow horse-drawn carriages to travel from France to England and vice versa. The idea for a tunnel returned in both the 19th and 20th centuries. They were abandoned, however, because it was believed that the national security of England needed to be maintained. The English Channel provided a natural border that protected Great Britain from the mainland of Western Europe. It wasn't until the late 20th century that the technology existed that made the underground passageway possible.



Prior to working on the Euro Tunnel Lucas assisted in designing and building



roadway projects in England. Much of this work focused on maintaining and improving the bridges that cross the

Thames River. He also supervised the *expansion* of large portions of



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the subway. He believes his experiences helped qualify him for work on the Euro Tunnel.

For this project, he supervised one of the huge tunnel boring machines called TBMs.



Each TBM was 800 feet in length. It housed the massive drilling wheel, the concrete

blocks that were used to line the freshly drilled walls. It also contained the **ventilation** systems, an area for eating and a mobile hospital in case of emergency. These machines removed and moved the heavy rock from under the seabed. Lucas' primary responsibility was to make sure the TBMs were **maintained** and running properly. It was very important that the machines were kept on schedule.

Lucas, his team and their TBM were the primary team that started the service tunnel. The service tunnel was the first of the three tunnels built. At the same time, French teams tunneled from France to England. The goal was to meet in the middle and join the two sections of tunnel. Lucas knew that the margin for error was very small. On December 1st of 1990, the English and French tunnels met at the mid-point of the service tunnel. Though this was a **monumental** achievement there was still a considerable amount of work to be done before the Euro tunnel would be ready for passengers.



For Lucas, the Euro Tunnel project was different from any project on which he had

worked. Normally, engineering projects are designed and constructed in order to allow for maximum **efficiency** while exhibiting spectacular visual design. The completed Euro Tunnel project will never be seen and admired from the outside. For as long as it is in operation its engineering magnificence will only be admired from the inside of its tunnels and then, only from the inside of the high-speed train cars.

Despite this, Lucas believes his work on the Euro Tunnel to be his most important work to date. After finishing the service tunnel his TBM crew helped dig and finish the English portions of the tunnels that would hold the passenger trains. Much like the bridges he helped to care for, the Euro Tunnel excels in improving the lives of the people that use it. Western Europe has experienced economic benefit as convenient transit from Great Britain to the mainland increases the flow of goods and labor.

Lucas sees roads and bridges like the network of veins and arteries that make up the human circulatory system. As the veins and arteries move blood throughout the body, roads, bridges and underground tunnels transport the lifeblood of society to and from their destinations. These people are key to sustaining the economic vitality of Western Europe.

