

BEYOND

DELIVERING THE FUTURE
FOR THE PAST 110 YEARS



LA TRIENNALE DI MILANO

110

1906 2016 salini
impregilo





“Call to mind from whence ye sprang:
Ye were not form'd to live the life of brutes,
But virtue to pursue and knowledge high”

Dante, *Inferno*, XXVI, verses 117-120

A COMPANY THAT HAS COME A LONG AWAY

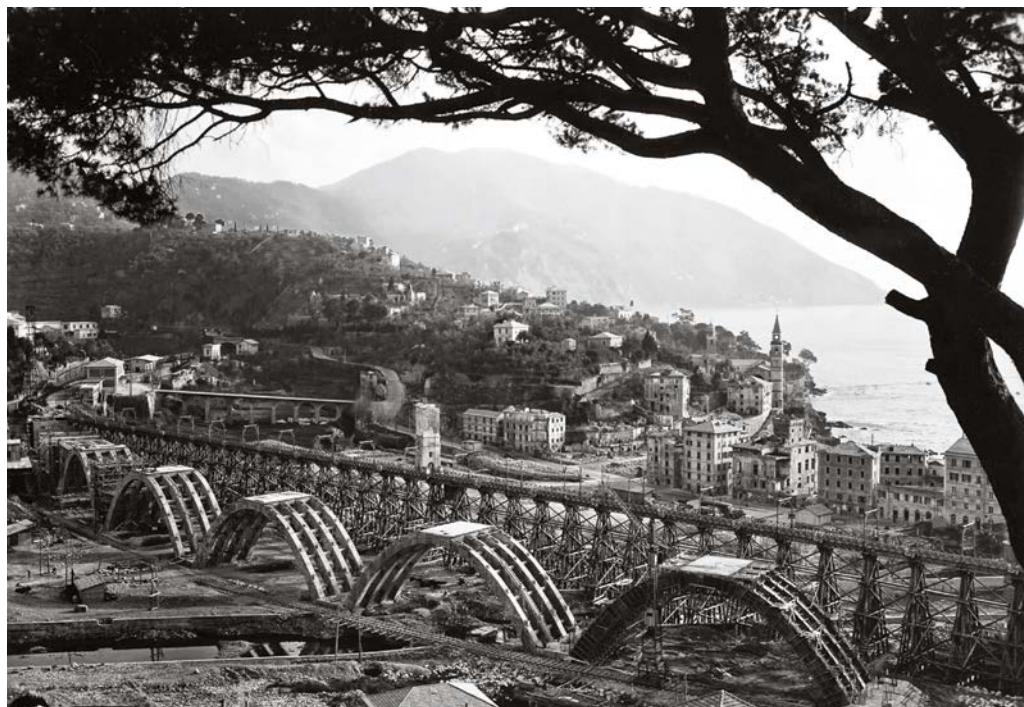
On the previous page:
Legadadi Dam, Ethiopia, 1967

«If I have seen further it is by standing on the shoulders of Giants». This is how Isaac Newton, one of the greatest scientists who ever lived, explained the value of heritage and Man's thirst for knowledge, which is expressed in his unstoppable desire to go **Beyond**.

These Giants, for Salini Impregilo, are the large-scale works that have been built around the world: complex infrastructure capable of going **beyond** the limits set by time and geography. Embracing change: this is how a company that is continuously evolving survives for more than a century. It meets the challenges of unexplored horizons. It looks towards the future and new generations.

It was 1906 when the Italian entrepreneurial families of which Salini Impregilo is heir, took their initial steps, by building their first works in this country. They did this with a great vision: they wished to grow by building complex infrastructure that would endure over time, a symbol of progress for current and future generations.

After 110 years, «BEYOND» aims to navigate the history that led to those companies becoming a leading global Group. It is a voyage through the works that have transformed the lives of millions of people in Italy and the world. They stand for the progress made by engineering and technology in the last century, and look towards the future of global infrastructure.



This 110 year-long journey is narrated through the images of the works and a multimedia path that offers historical and previously unseen videos of these projects: the faces and voices of the men and women who are the protagonists of this adventure are the real storytellers.

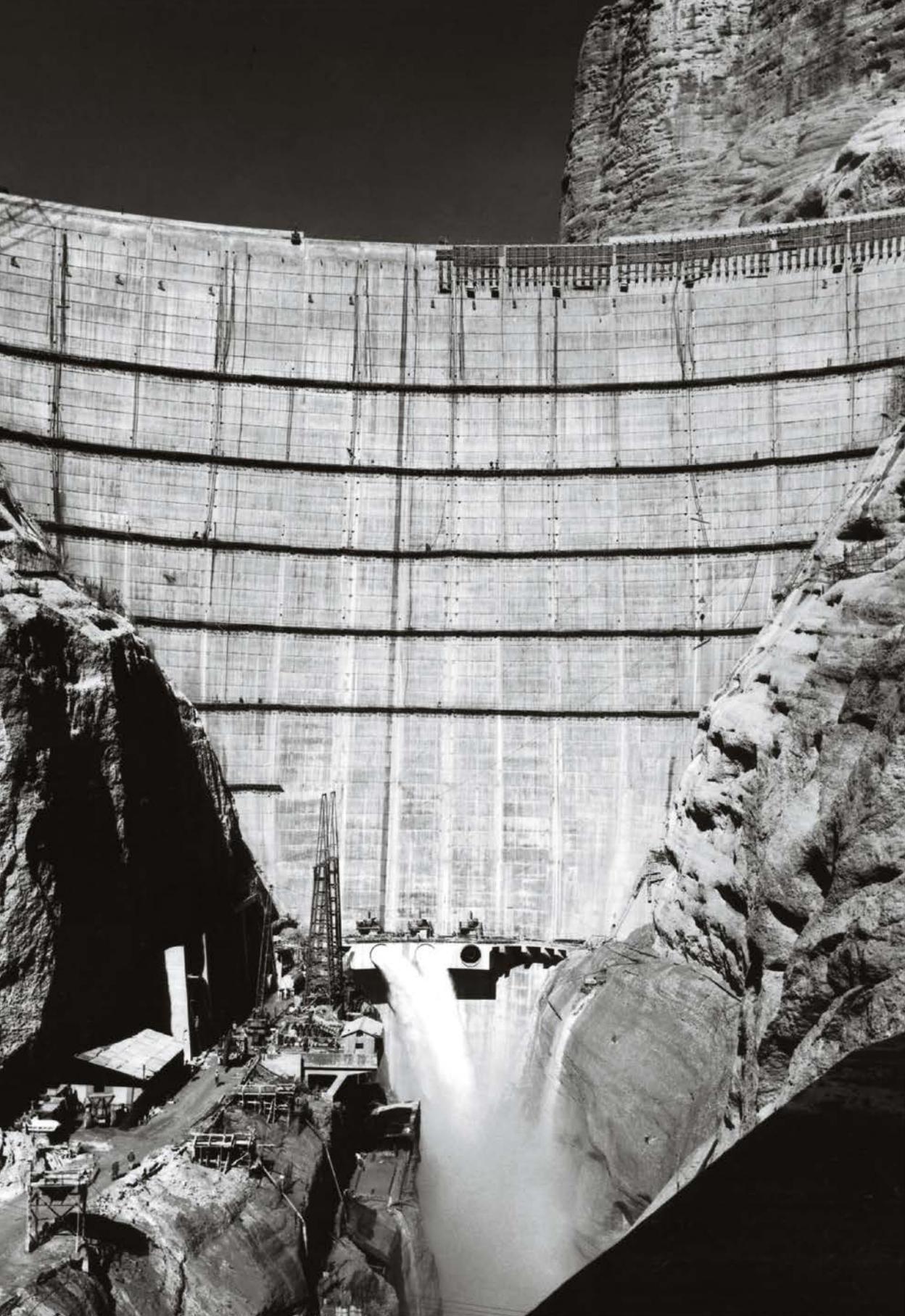
This is a unique experience that lets the visitor enter into the events that marked the 20th century's evolution: to relive the stories that accompanied successive generations and left a symbol of the progress made by engineering and Man's know-how through the largest public works ever built. The excellence of the Italian genius applied to infrastructure is told through epic works: the Abu Simbel Temples in Egypt, whose rescue UNESCO called for, as part of World Heritage; the dams in Africa, where water means life: from the Kariba dam to the entire dam system that is revolutionising Ethiopia's strategic positioning in Africa; the metro systems in Paris, Copenhagen, New York, San Francisco and Riyadh, which are redesigning the sustainable mobility of world most densely populated cities; the Autostrada del Sole and the High-Speed railway system in Italy, which unites the north and south of the country both socially and economically.

Genoa–La Spezia Railway Line and Viaduct of Recco, Italy, 1914 and 1946.

On the following page:
Trans–Iranian Railway, Iran, 1933







A HISTORY THAT GOES BACK 110 YEARS

— THE ORIGINS

Girola, Lodigiani, Salini, Impresit, Salini Costruttori, Cogefar, Impregilo, S.A. Healy, Todini, Salini Impregilo, together with Lane Construction: these are the companies that have been the protagonists of this impressive history that begins at the turn of the 20th century. From Italy, the nation's characteristic ingenuity and capacity to build large complex infrastructure were gradually exported globally, bringing an unprecedented know-how to the wider world.

Dez Hydroelectric Plant, Iran, 1960

Two pioneers, Vincenzo Lodigiani and Umberto Girola, the former from Piacenza, the latter from Milan, began this adventure in 1906. Lodigiani's debut involved the construction of a bridge on the Chiavenna and a section of the Cremona-Fidenza railway. The excellent results saw him win a contract from the newly established Ferrovie dello Stato (State Railways). It entailed building a bridge on the Taro at Fornovo. The first section of the Fornovo-Fidenza railway then followed. The Genova-La Spezia and Genova-Ventimiglia railways already represented innovative solutions, but the most daring project was realised at the viaduct at Recco. Built between 1914 and 1918, it was destroyed during the First World War and then rebuilt as a symbol of Italy's post-war reconstruction.

The post-war period saw the construction of new dams. Italy needed energy and most of it was produced by harnessing the power of water. The Mignano Dam represented a giant leap in terms of quality: it measures 64 metres in height and consists of 230,000 cubic metres of concrete with a capacity of 15 million cubic metres of water. It was the first time that conveyor belts were used on a worksite. Girola and Giuseppe Torno also made dams



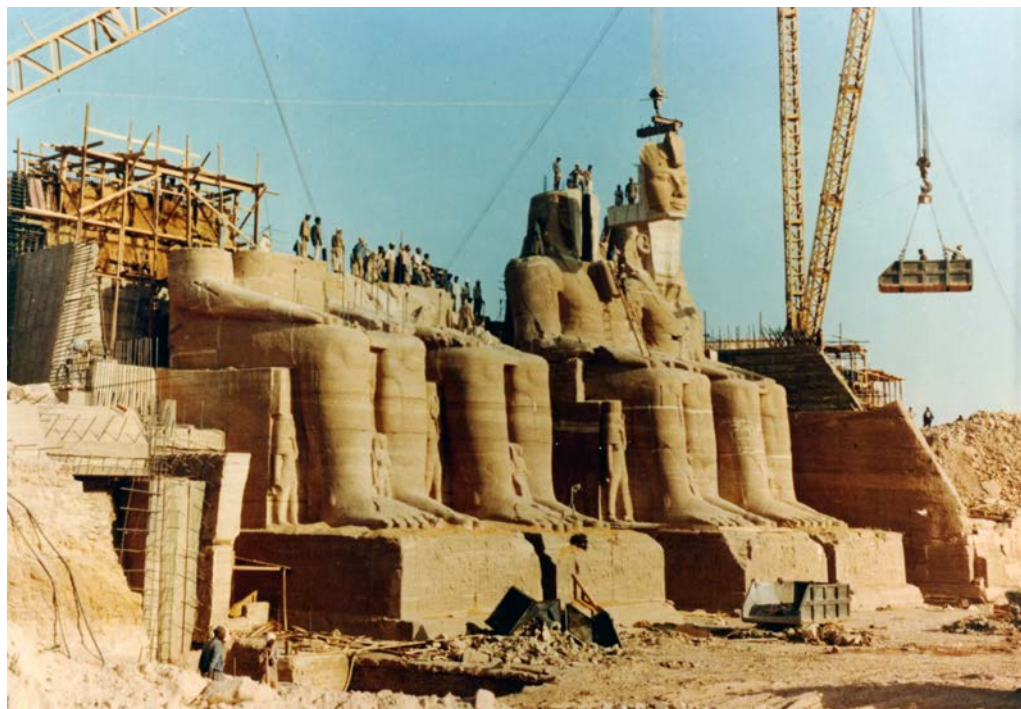
Kariba Hydroelectric Plant, Zambia and Zimbabwe, 1956

and hydroelectric plants their main focus of business.

In 1929, FIAT, with Impresit (Società Imprese italiane all'estero) chaired by Alberto Pirelli, who in 1926 created the Istituto nazionale per il commercio estero (National Body for Foreign Trade), entered the scene. It made Impresit one of its operational branches. It built the Trans-Iranian Railway (1933-36), which marked the beginning of a new relationship that would be renewed over time. It also signalled the start of the era of building large public works abroad.

During this period, Pietro Salini, the grandfather of the current CEO of Salini Impregilo, made his debut. Born in 1904, he had a long career designing and managing construction projects. In 1936, he decided to start his own construction business in Rome. He proposed himself as candidate to build a new stadium in Rome: the «Stadio dei Cipressi» at the feet of Monte Mario. However, with the outbreak of the Second World War the project was interrupted.

In 1956, Pietro re-established the Salini firm with his son Simonpietro. In the same year, Impresit, Girola, Lodigiani and Torno worked together to build Africa's Kariba Dam on the Zambesi River. When completed, it was one of the largest dams in the world. It could deliver 1,320 MW of electricity to Zambia and Zimbabwe.



In the meantime, Salini started to work in Ethiopia. In 1964, Emperor Haile Selassie decided to modernise his country. Addis Ababa was growing rapidly and needed water and electricity.

Abu Simbel Rescue, Egypt, 1964

Legadadi was chosen as the site for the dam. The project was a great success, and the dam, to this very day, delivers 70% of the capital's water, which has three million inhabitants.

The Salini firm, during these years, came to know Africa well in all its various aspects, and lived through its dramatic events in Ethiopia, Ghana, Nigeria, the Northern Sahara, Morocco, Algeria, Libya and Sierra Leone.

Among the Group's historic portfolio of projects, that of Abu Simbel is a highlight. In 1960, Egyptian President Nasser ordered the building of the huge Aswan dam. The artificial lake near the first cataract on the Nile would have submerged the ancient monuments of the temple of Abu Simbel, built by Ramses II during the 13th century B.C.. From 1964 to 1969, the Swedish company VBB designed and managed the works to move this huge monument, which had been declared a World Heritage site by UNESCO. It was totally dismantled and rebuilt at a new location. 113 countries took part in the project. Impregilo played a significant part in dismantling and rebuilding the temple.



— THE ITALIAN MIRACLE

Palazzo Lombardia –
Milan, Italy, 2006

In Italy, the economic miracle of the 1950s and 1960s opened up the domestic market to construction companies. A project that was aimed at uniting the country's north and south with a motorway acted as a driving force for development. It was conceived by Vittorio Valletta, who in those years was the CEO of FIAT. He discussed it with Enrico Mattei, ENI's chairman, and Raffaele Mattioli, chairman of the Banca Commerciale Italiana. In May 1955, the Italian Parliament approved the bill. IRI was appointed to lead the work. Pirelli and Italcementi also joined the project. The companies that today are part of the Salini Impregilo Group were called upon to participate in the various phases of the project. The first stone of the Autostrada del Sole was laid on May 19, 1956. The A1 was inaugurated eight years later, live on TV, by Aldo Moro, the Italian Prime Minister at that time.

The project to unite the country with the Rome-Milan High-Speed railway can be considered one of the most significant of Italy's great leaps towards modernity. Both Salini and Impregilo participated in its construction.

In 1989, Cogefar Impresit S.p.A was established,



Gran Sasso Highway Tunnel,
Italy, 1969

following the merger between Cogefar S.p.A (Costruzioni Generali Farsura), a firm that was active in the large scale infrastructure sector from 1959 onwards, and Impresit S.p.A, at that time part of the FIAT Group. Subsequently, in 1994 the companies Cogefar Impresit, Girola, Lodigiani and Impresit-Girola-Lodigiani merged to create Impregilo S.p.A., concentrating the activities of each one into a single, great entity capable of competing with the best international groups of the sector.

In 2011, the Salini firm headed by Pietro, the founder's grandson, entered the scene. Up to that point, the Roman group had grown only internally. From 2008 to 2009, it acquired Todini, the firm established in Perugia in the 1950s, and it subsequently expanded. The firm's turnover doubled and Salini was ranked third in Italy's top contractors, after Impregilo and Astaldi. The company's ambitions certainly did not end there.



— AN INTERNATIONAL CHAMPION

In September 2011, the sovereign debt crisis was causing great concern in Italy. Pietro Salini started buying Impregilo shares. Once the 25% threshold had been exceeded, he presented the Campione Nazionale (National Champion) project to shareholders and called for an extraordinary meeting to be held. He then presented his plan to the financial community in Milan, London, New York and Paris. The shareholders nominated another Board of Directors, and the former board was dissolved. Pietro Salini became the new CEO. The Campione Nazionale finally saw the light of day. The company needed to go even further and create a Campione Internazionale (International Champion).

The United States opened its doors to the Group when Impregilo bought S.A. Healy, a company highly specialised in tunnelling. In 2016, Salini Impregilo acquired Lane Construction, a leading U.S. builder of highways and



the main private producer of asphalt in the country.

Dams and hydroelectric plants, motorways, roads and bridges, railways and metros, airports, canals, civil and industrial buildings: Salini Impregilo is active in 50 countries, employs 35,000 people from 100 nationalities and has a turnover of €6 billion. It is the global leader in the water sector and took just a few years to become a multinational, a leader in large complex infrastructure projects. The leap has been extremely rapid, but was made possible due to the Group's flexibility and adaptability, as demonstrated throughout the 110-year history of the companies from which it originates.

“We are implementing a collective dream in a vital sector of activity,” explained Pietro Salini, CEO of Salini Impregilo. “The connection with one's job, the pride in what one does, and for the matchless skills that one can acquire – this resembles what was narrated by Primo Levi in his novel *The Wrench*. What we have created exists. Everyone can see and judge it for themselves. Everyone can use it. It is there and it lasts throughout time».

Lake Mead Intake Hydraulic Tunnel
– Las Vegas, USA, 2008.

On the following page:
“Autostrada del Sole” Highway,
Italy, 1956







THE “BEYOND” EXHIBITION: A VOYAGE OF 110 YEARS

BEYOND is an interactive exhibition, a path that narrates the story of large infrastructure in the world, through the lens of a Group that began 110 years ago in Italy before deciding to export its know-how all over the world. The visitor will embark on an amazing voyage through the large, complex infrastructure sector through an immersive multi-sensory experience that offers spectacular imagery and sounds from an unfamiliar world.

An engrossing multimedia path, capable of allowing the visitor to relive the great public works in all their glory, revealing their beauty and functionality. This voyage will take them to the Panama Canal that unites two oceans; dams and hydroelectric plants that produce clean energy as an alternative to nuclear plants, such as the dams in China, Ethiopia, Argentina and Colombia; roads and bridges that have become the spinal cord of vast countries such as the United States; metros and railways that connect cities and move people and goods sustainably, such as the metro systems of Paris, New York and Riyadh; iconic buildings, which replicate nature's beauty and that surpass the imagination, such as the Stavros Niarchos Cultural Centre in Athens, Rome's Auditorium or Abu Dhabi's Great Mosque.

The Exhibition celebrates the role of infrastructure in the world: «gentle giants» that eliminate barriers, while promoting the transit of people and goods, creating well-being and wealth, and allowing future generations to

Kingdom Centre – Riyadh, Saudi
Arabia, 1998

benefit from their functionality.

The Exhibition is organised into 8 zones. Each one tells the story of our past and future challenges through iconic works.

Passing through these zones, the visitor will also travel through time, obtaining a view of Man's history and conquests. Going **beyond** the present moment, it offers an important heritage for new generations, who will then be capable of creating a more contemporary and inclusive idea of progress.

— ZONE 1 AND 2. PANAMA: THE JOURNEY BETWEEN THE OCEANS

Expansion of the Panama Canal
– Third Set of Locks,
Panama, 2009

In 1500, the Spanish explorer Vasco Núñez de Balboa was the first person to imagine connecting two oceans: the Pacific and the Atlantic. His dream materialised in 1900, with a work built by the U.S. Army. In 2016, a consortium with Salini Impregilo delivered the new Panama Canal, renewing that dream.

To cross the new Panama Canal means to go **beyond** time. It means to travel through history, when the vision of many travellers becomes a reality.

The exhibition begins with a virtual voyage through the new Panama Canal. The spectator can board one of the megaships that cross it, following the construction phases that marked its birth as one of the largest and most complex engineering works ever completed.

It is an emotional and intellectual journey that concludes with a video and a model that reproduces the functioning of the new Canal's locks, showing how Italian ingenuity can save 60% of fresh water when the ships cross.





— ZONE 3. WATER IS LIFE

Kariba Hydroelectric Plant,
Zambia and Zimbabwe, 1956

To channel and exploit water for life has always been one of Man's first priorities. Water has always been the real "blue gold" of our planet.

Since 3,000 B.C., in Jawa, Jordan, the local populations built a rudimentary hollow reservoir system, giving birth to one of the first examples of a dam. Mankind came to understand understood that he could go **beyond** nature, exploiting its power to his advantage. The Ancient Egyptians, Persians, Ancient Greeks and Romans and the civilizations that followed all did likewise. This has occurred until modern times, when the techniques used to build dams were refined and brought to perfection, allowing complex engineering works to be built.

This immersive zone allows the visitor to explore some of the most important engineering works ever to be realised in the world. These harness water and produce clean energy, supporting agricultural activities, and quenching the thirst of whole cities such as Addis Ababa. Visitors can enjoy a voyage both above and within a dam, discovering the secrets of one of the deepest tunnels in the world, built to take water under the desert to supply the needs of Las Vegas.



— ZONE 4. THE ROAD TO GROWTH

“On the Road” is not only the American writer Jack Kerouac’s masterpiece. It also stands for Man’s desire to discover, to trade, to grow... a symbol of the thirst for knowledge, surpassing existing limits, connecting places and people.

Roads are the means we use to do this. They allow us to pursue this search: from the Silk Road, which covered 8,000 kilometres to connect the Chinese and Roman Empires, to the westward race that fuelled the American Dream for many years.

By continuing one’s voyage within this zone dedicated to roads and bridges, the visitor can follow the paths that created connections throughout the world, from bridges in Argentina to the great U.S. highways, arriving at the road systems of Europe that changed the development model of countries such as Italy, where the Autostrada del Sole connected the country’s northern economy to that of the south for the first time.

Rosario–Victoria Motorway Bridge,
Argentina, 1998



— ZONE 5. LEADING A SUSTAINABLE FUTURE

"Red Line North Underground"
Doha Metro System, Qatar, 2013

Railroads connect cities, move goods, reduce traffic and help eliminate air pollution.

From railways to metro lines: rail transport is a modern feat of engineering that runs along the twin tracks of innovation and technology. By entering a real tunnel aboard a high-speed train or a tunnel-boring machine (TBM) the visitor is offered a total immersive experience. They are taken on a voyage of surprise. In just a few minutes, the visitor is able to move from Rome, Copenhagen, Doha, and Riyadh, and travel on the high-speed railway in Italy, through the Gotthard Pass in Switzerland, the Recco viaduct or the legendary Trans-Iranian Railway.



— ZONE 6. BUILDING BEAUTY

The voyage continues by revealing the secrets of several buildings that draw their inspiration from nature. They have been designed and built not only to evoke the senses, but also to be practical and functional at the same time: taking inspiration from nature, integrating the needs of Man and those of the environment, combining aesthetics with technical excellence, and going **beyond** the imagination.

The zone is dedicated to the work that stands as the symbol of the perfect fusion between the innovative vision of a great architect such as Renzo Piano and engineering: Athens' Stavros Niarchos Cultural Center. It can be visited virtually, by looking at the project's design, drawings and photos taken at the construction site. It is a wonderful example of architecture built on the site of the ancient port of Kallithea, to connect the city to the sea. This virtual voyage also recreates the vegetation of the Center's park with its wonderful fragrances.

Images of iconic works, such as Riyadh's Kingdom Centre (a skyscraper that seems to challenge the very city from which it rises), the Auditorium that for the first time brought a music park to Rome, and the Grand Mosque of Abu Dhabi (known worldwide for its beauty and its precious marble and minarets) will also be on show.

Stavros Niarchos Foundation Cultural
Centre – Athens, Greece, 2012

— ZONE 7. 110 YEARS OF FUTURE

Tocoma Dam, Venezuela, 2007

A public work is conceived in the present to live in the future, going beyond a single generation.

In this zone, the visitor will be immersed in the history of the Group's major works worldwide. A unique wealth of images and experiences is provided along a timeline that illustrates how these great examples of infrastructure have coincided with significant moments in history.

This zone features historical videos and documentaries by renowned directors such as Ermanno Olmi and a documentary by Giovanni Minoli, who through a very concise journalistic reconstruction of 5 mega-projects narrates the story of the Group.

The zone also allows visitors to meet and discover the identities of the people whose hands minds have made this great adventure possible.





— ZONE 8. CONNECTIVITY IS THE FUTURE

The last zone provides the visitor with information relating to the Group's latest trends and future trajectory, taking them into the near future, beyond our 110 years of history.

This is a journey to the farthest corners of the world to discover those landmark projects that have become a symbol of growth for entire generations: 1,017 in Europe, 412 in Africa, 222 in North America, 213 in South America, 54 in the Middle East and 66 in Asia and Oceania to form a total of 2,000 public works that have improved the lives of millions of people.

The visitor will not only be able to imagine but will also experience the future, by immersing themselves in a voyage that has connectivity at its core and the ability to bring together the experiences of different communities. A journey into the future that transports us on the wings of thought as envisioned by great men and women who have left their impression both on history and on us.

The present and the future interconnect in a gaze beyond single events, combining them into a dense network of virtual pathways as we step into tomorrow.

Ras Al Khor Interchange, Dubai, UAE,
2006

On the last page:
Tarbela Hydroelectric Plant, Pakistan,
1968.

All the photos: Image Library Salini
Impregilo





Welcome to the remarkable story
of a Group that has been
planning its future for 110 years.







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