

C A S E S T U D Y

NÎMES MONTPELLIER HIGH SPEED RAIL LINE: ARCHAEOLOGY



■ **DURATION OF THE CAMPAIGN:** 21 MONTHS

OVERALL IMPACT ON THE CONSTRUCTION SCHEDULE: NONE (FULLY OUTSIDE OF THE CRITICAL PATH)

BUDGET: €13M

BUILDING FOR THE FUTURE WHILE STUDYING THE PAST

Construction of the CNM Nîmes Montpellier high speed rail line for some represents more than the addition of a new economic asset. It has also allowed valuable insights into human development from antiquity to the modern day, through an extensive programme of archaeological study.

There is a lot more to building a railway than just the civil engineering, laying track and installing signalling. The benefits to society and communities go beyond transport connectivity and faster journeys. Along the 80km of the Nîmes Montpellier Bypass (CNM - Contournement Ferroviaire de Nîmes et de Montpellier) high speed rail line, construction offered the opportunity to launch a major archaeological exploration.

French law on heritage conservation requires that the **owners of all large infrastructure and building projects must conduct archaeological investigations before construction can start.** These initial studies are usually carried out by INRAP (France's National Institute for Preventive

Archaeological Research) and submitted to the French Ministry of Culture, which then decides where the project owners must perform more detailed archaeological excavations.

Along the route of the CNM line, detailed investigations were carried out at no less than 20 different locations, by INRAP, which started work with a team of **over 100 archaeologists on site** from October 2012.

"One of the good things about such a project is the scale of opportunity for study presented," says INRAP's Director of Investigations for the CNM, Jean-Yves Breuil. "Around 80 sites were excavated initially. Those selected for detailed investigation were chosen on the basis of the extent of their preservation and how much they were likely to contribute to scientific knowledge. **Archaeology on the CNM route covered all periods of humanity.**"

Each of the excavations was significant for different reasons, Jean-Yves adds. One in particular, close to Aimargues, at roughly the mid-point between Nîmes and Montpellier, has offered up a rare wealth of insights into **village life in the Mediaeval Period**, from the 5th to the 15th centuries.

"In most cases across southern France, villages still exist and have developed on the same footprint they originally occupied. But here, at a location

we've called the Village of Saint-Gilles de Missignac, we found one that was abandoned around the year 1400. We were able to excavate the stratigraphy of occupation across almost the full extent of the village, allowing us to understand the different phases of its evolution from the end of the Roman period," Jean-Yves says.

Findings from Saint-Gilles de Missignac include ovens and clay moulds in sunken pits used to cast bronze church bells between the 10th and 12th centuries. The INRAP archaeologists also found the locations of 80 separate domestic dwellings and more than 800 burial sites. DNA analysis on samples taken from skeletal remains has provided an enormous wealth of information.

"A lot of research is being done on the **health and diet of people during the Mediaeval Period** and we hit a rich vein of data at the Missignac site," Jean-Yves says. "Information on diet and eating habits gives us a lot of knowledge on how trade and the economy worked at that time; what people were trading, planting and eating and how they were using their environment and resources."

Jean-Yves makes a wider point on archaeology and infrastructure: that excavations like those at Missignac show that projects like the CNM represent the continuation of an ages-old process of development: "The changing of the landscape in this way is not a new thing. It dates back





thousands of years,” he says. “Developers and builders often oppose archaeological work as it can delay their progress, but the furthering of knowledge on historical and cultural change is important. **There are many parallels between what we find and changes to the way land is used now.** Modern developments are a continuation of people clearing forests to create settlements and villages.”

Not everyone in the construction industry finds archaeology an irritation. The principal contractor in the Oc’Via partnership, Bouygues Travaux Publics, has a close association with INRAP as one of the organisation’s ‘Grand Patrons’.

During an interview for INRAP’s La Lettre magazine, Bouygues TP’s Director General, Philippe Amequin, stated the reasons behind his company’s commitment to archaeology: “The ambition of our partnership with INRAP is about building the projects of tomorrow while respecting those of the past,” he said. “Acting as a patron expresses a citizen commitment to archaeology, which needs developers to take responsibility for future generations.”

The other partners in Oc’Via include Meridiam, FIDEPPP, Colas, Spie batignolles and Alstom. The project company’s adopted approach to archaeology has reflected Bouygues’ commitment. INRAP’s initial investigations started before

Oc’Via was awarded the 25-year contract to design, build, finance and maintain the CNM. But after financial close on the project was reached, Oc’Via decided to delegate responsibility for archaeology to the contracting team of Bouygues, Colas and Spie batignolles – which subsequently appointed INRAP for the detailed investigations.

“The contracting joint venture was responsible for managing the contracts and planning of the archaeological work with INRAP. It also covered the costs of INRAP’s circa €13m fees for the detailed investigations. Oc’Via remained responsible for communication of the main findings,” says Thierry Parizot, former CEO of Oc’Via.

Risks of the archaeology impacting on the overall CNM project programme were also transferred to the contracting team. The contractor was liable for strict penalties if delivery of the CNM line was delayed due to any reason, with the exception of any ‘shared risks’ agreed in the contract. ‘Exceptional discoveries’ in the archaeological programme were included as a shared risk, if they caused a delay of over six months. The contractor could only negotiate **dispensation from financial penalties if an exceptional discovery caused a delay of six months or more.** In the event, however, there was no impact at all on the anticipated programme.

“Detailed excavations started in October 2012, moving fairly



THE LATEST ADDITION TO FRANCE’S HSR NETWORK

The CNM Nîmes Montpellier Bypass was built to provide a new 80km link in France’s LGV (Lignes à Grande Vitesse) high speed rail network. **Opened in December 2017**, it joined up existing high-speed lines to the east and west, so allowing continuous LGV services on dedicated infrastructure from Paris through the Languedoc region of southern France to Perpignan, the Spanish border and Barcelona.

Construction of the CNM had several other important aims. It relieved the highly congested Nîmes-Montpellier line, so **freeing up capacity for local services.** It has added a new rail freight corridor – **the first new high-speed line built for passenger and freight services,** a doubling of rail freight over 10 years is targeted. The CNM promises a big uplift in economic development for the Languedoc region, with the new interconnecting stations of Montpellier Sud de France and Nîmes Pont du Gard now under construction.



The CNM was built through a public private partnership between the French rail infrastructure manager SNCF Réseau and the project company Oc’Via – a special purpose vehicle established by Meridiam (53%), FIDEPPP (27%), Bouygues Travaux Publics (9.8%), Colas (5%), Spie batignolles (2.8%) and Alstom (2.4%). Oc’Via is responsible for the design, construction and maintenance of the CNM line, plus the financing of the project, which is valued at around €1.8bn over the **25-year term of the PPP contract.** ■



rapidly from site to site in turn. Of course, occasionally we had to remind the archaeologists of our time pressures, but we all developed very good relations with the INRAP team, which was very efficient in its work, finishing on schedule 21 months later. We listened to their requests and they were very respectful of our constraints. **The entire campaign was out of the critical path and had no impact on the overall construction schedule.** It was very interesting and a privilege to witness what was discovered and I think together the Oc'Via team and INRAP were able to do a lot to interest people in their local history," Thierry says.

A number of **open-days were held to give public access to the archaeological work** as it was ongoing. More than 1,300 people turned up to view the excavation of Saint-Gilles de Missignac. And after the work was finished and the excavations covered up by CNM construction, public meetings were held in villages along the length of the line, to give the INRAP archaeologists opportunity to present their findings. A temporary exhibition in the Museum of Lattes near Montpellier has now ended, with some of the exhibits transferred for permanent display in the Museum of Montpellier.

Among many other interesting discoveries on the CNM route, at

Saint Pierre, about 2km inland from the site of the ancient Greek port of Lattara, excavations revealed **the emergence of Greek cultural influence in Gallic life.**

"This was from the Gallic Period, from about the 6th to 5th centuries B.C, which was a very important time in the history of southern France as the Greeks were founding Marseille and other cities in the region," says Jean-Yves. "Excavations at Saint Pierre included the discovery of burial sites and a crematorium, which we've been able to recreate. Chemical analysis has allowed us to study funeral meals and the rituals around death, cremation and burials being observed at the time."

A lot of objects were found, some made locally and others from Greece, Italy and elsewhere in the Mediterranean, giving **evidence of healthy trade across the region.** The excavations revealed a funeral garden and traces of a vineyard - the beginnings of grape cultivation for producing wine.

"The Gallic family that lived here had quite a high position in society," Jean-Yves says. "With the Greek influence on life and the burial ritual, food and objects found, we can see the process of acculturation developing at the time, which provides a lot of interesting information to help understand similar processes still under way today." ■

ANOTHER BIG DIG

Many Meridiam assets have been the place of archaeological discoveries.

In Slovakia for instance, archaeological excavations have been undertaken on a grand scale prior to construction of the 52km long PR1BINA expressway – **the largest such study on a motorway project in the country** thus far. Dozens of sites were discovered and excavated, containing around 600 graves of gregarious communities dating back to the 11th century.

A large number of broken ceramics and primitive jewellery dating back **from the Prehistoric era to the Middle Ages** were also found along with graves containing only heads or bodies, which had many of their bones broken. Historians have ascribed this phenomenon to ritual murders.

According to Matej Ruttkay, director of the Archaeological Institute in Nitra, investigations of the settlements across the Great Morava region confirm that Nitra was a major European city in the 12th and 13th centuries and much larger than the current town. ■



⁽⁴⁾A 52-minute documentary (in French) describes in details the archaeological works and the astonishing discoveries on the project route : <https://viaoccitanie.tv/passages/>