

# Antonio Cañavate-Grimal



## Profession

Geotechnical / Civil engineer

## Current Position

Engineer

## Joined Arup

2014

## Years of Experience

18

## Nationality

Spanish

## Qualifications

PhD Construction Engineering, Universidad Politécnica de Valencia (UPV) & Universidad CEU Cardenal Herrera (UCH-CEU), Spain

Master Degree Geotechnical Engineering, Universitat Politécnica de Catalunya (UPC), Spain

Master Degree Civil Engineering, Universidad Politécnica de Valencia (UPV), Spain

## Professional Associations

Chartered Member, Institute of the Spanish Civil Engineering Institution (Colegio de Caminos, Canales y Puertos)

## Languages

Spanish - Mother Tongue

Catalan - Mother Tongue

English - Fluent

Portuguese - Fluent

## Publications

Antonio Cañavate-Grimal, Antonio Falcó, Pedro Calderón, Ignacio Payá-Zaforteza, "On the use of stochastic spectral methods in deep excavation inverse problems", Computers & Structures 2015 (submitted)

Pablo Ballesteros-Pérez, P., González-Cruz, MC, Cañavate-Grimal, "A Mathematical relationships between scoring parameters in capped tendering". International Journal of Project

Antonio is a Geotechnical & Civil engineer with a broad experience managing the geotechnical issues of a variety of projects from early conception to whole completion. He is experienced in soil modelling with FEM software (mainly Plaxis), especially for projects where soil structure interaction is a major issue. Antonio possess a solid soil behaviour comprehension for geotechnical investigation an interpretation. He has a good knowledge of most of the geotechnical instrumentation techniques, especially for monitoring earthworks, preloads and diaphragm walls.

Antonio is developing a growing interest in probabilistic methods as his PhD Thesis research was focused on solving inverse geotechnical problems (soil parameter identification from diaphragm wall instrumentation data) innovatively using the stochastic finite element methods (SFEM).

Antonio is an engineer with over fifteen years of geotechnical design experience combining a solid theoretical knowledge combined with practical experience.

## New Mexico City International Airport (NAICM), Mexico City (2015-2017)

Mexico City ground conditions are among the most extreme ones in the world. The new Passenger Terminal and the Control Tower are two singular buildings whose design and construction is a real challenge. Antonio was a key member of the geotechnical specialists who undertook the geotechnical design and assisted in the construction administration.

## Chelsea Barracks deep foundation, London (2015)

Antonio provided value engineering in the design of bored piles subjected to negative skin friction.

## Buildings at "Las Moreras" and "Alameda Boulevard" foundation design, Valencia, Spain (2012)

The ground conditions of those site were remarkably unfavourable because the presence of a thick very soft organic clay. Antonio assessed the use of the diaphragm wall panels as foundation elements.

## Service tunnel crossing Valencia airport runway, Valencia, Spain (2012)

In order to meet the increasing demands of electricity of the Valencia Airport, a new transformer station with a new electricity cable layout was proposed. The works included a small diameter tunnel crossing the airport runway. Antonio was part of the team who prepared the bid documentation and he also predicted that the settlements due to the tunnel construction were admissible.

## New Terminal Satellite, Barcelona, Spain (2011)

Management, Volume 30, Issue 7, October 2012, Pages 850-862

Pablo Ballesteros-Pérez, P., González-Cruz, MC, Cañavate-Grimal, "On competitive bidding: Scoring and Position Probability Graphs" International Journal of Project Management, In Press, Corrected Proof, Available online 17 October 2012

Pablo Ballesteros-Pérez, P., González-Cruz, MC, Cañavate-Grimal, Pellicer, E. "Detecting abnormal and collusive bids in capped tendering" Automation in Construction, Volume 31, May 2013, Pages 215-229

Antonio led the team that prepared the ground investigation report and he also was in charge of the dewatering concept design. He also conducted a greenfield modelling to assess the dewatering effects on the New Control Tower.

#### **"Andalucia" and "Las Quimicas" docks hydraulic fill and preload design Project title, Tarragona, Spain (2010)**

Antonio designed the preload of the "Andalucia" dock to reduce the settlement after construction and also designed the settlement instrumentation program and supervised the settlement performance.

#### **Tarragona 2nd ring road, 40 m high embankment stability study, Tarragona, Spain (2009)**

Antonio conducted the ground investigation to determine the cause of the cracks observed on the pavement of a section of road on a 40m high embankment. He also prepared the interpretative GIR which included slope stability analysis and proposed remedial works.

#### **Marina Life Building dewatering study Puerto de Ibiza, Spain (2009)**

Due to the presence of a shallow limestone stratum whose surface was very irregular, concerns were raised about the watertightness of the steel sheet wall retaining wall. Antonio, using the results of a pumping test, assessed the water inflow during the construction and the effects in the surrounding buildings.

#### **A-63 motorway, section Salas-La Espina, slope stability study, Asturias, Spain (2009)**

The main role of Antonio was to design remedial works for a 50m slope which had toppled after the highway trench excavation.

#### **Site preloading design and construction supervision, Puerto de Sagunto, Valencia, Spain (2009)**

Antonio designed a moving preload reduce the settlement in an industrial area that was intended to store steel products. He also supervised the settlements performance during the preload.

#### **Nou Octubre administrative centre geotechnical report and foundation design, Valencia (2008)**

Antonio was part of the team which designed the foundation. His role was to predict the settlements and to determine the subgrade modulus for the different foundation elements.

#### **Hospital building construction settlement monitoring, Gandia, Spain (2007)**

Antonio designed a preload reduce the predicted settlement and allow a raft foundation instead of deep foundation. He also prepared the specifications of the settlement instrumentation and supervised the instrumentation readings during the construction.

#### **Dynamic compaction at logistic park design and supervision, Riba-Roja del Turia, Valencia, Spain (2007)**

An extensive storage area was designed on a landfill. Antonio designed and supervised the remedial works performed by

dynamic compaction.

**Neutopia leisure centre geotechnical report, Valencia, Spain (2007)**

A major leisure development was planned in Valencia. The proposed design was prone to uplift. Antonio was the geotechnical engineer that prepared the interpretative report and undertook the scheme design of a drained raft solution.

**Madrid-Valencia high-speed railway complementary geotechnical report, section: San Antonio-Requena, Valencia, Spain (2006)**

Antonio was the geotechnical engineer who supervised the ground investigation report and prepared the interpretative report which focused on the bridge foundations.

**Madrid-Valencia new high speed railway geotechnical report, section CAMPOS DEL PARAISO - HORCAJADA, Cuenca, Spain, (2004)**

Antonio was part of the team that prepared of the bid. Antonio initially led the team in charge of producing the GIR.

**Madrid-Valencia new high speed railway geotechnical report, section CAUDETE DE LAS FUENTES - VENTA DEL MORO, Valencia, Spain, (2003)**

Antonio assisted in the preparation of the bid. He also led the team in charge of producing the GIR. He was also the liaison with the field team to decide the changes in the ground investigation.

**“Valencia” building micropile foundation reinforcement design and supervision, Alzira, Valencia, Spain (2002)**

Antonio was involved in the construction control of the micropile foundation reinforcement in a building whose piled foundation had failed.