

**Curriculum Vitae**
MARCO SCARELLA**BIRTH:** 1977, Sanremo (IM), Italy
NATIONALITY: Italian**PROFESSION:** Hydraulic Engineer
PROFESSIONAL SENIORITY: 7 years**STUDIES:** Graduated with honours in Hydraulic Engineering for Environment and Territory at the University of Genoa, in March 2002.**LANGUAGES:** **Italian:** mother tongue, **English:** very good, **Spanish:** good**LICENSES:** Registered Engineer at the "Ordine degli Ingegneri of Imperia" with # 707.**PROFILE:**

Since the beginning of his professional career, Marco Scarella has worked as civil and hydraulic engineer, following projects and site works for the construction of large dams, hydropower plants and related hydraulic works. In such projects he has been mainly involved in the hydraulic, hydrologic, hydrogeological and environmental aspects.

In the development of each project, Marco Scarella has been gradually charged with different engineering duties: data analysis, investigations programs, structural calculations and verifications, assistance and coordination on site.

*In the field of the **hydraulic works**, he has been involved as hydraulic engineer in the executive design of large dams, navigation dams and hydropower plants. Within such projects he has designed and calculated conventional and unconventional spillways (labyrinth weirs, stepped chutes, morning glory), inlet and outlet works, diversion tunnels, penstocks and turbines, gates and valves, navigation locks, flood control channels. He has also coordinated construction and testing of some **physical scale models** for the optimization of spillways performance (Val Noci and Badana Dams, Genoa, and Chaparral Dam, El Salvador).*

*In the field of **hydrology**, he has performed hydrologic and climatologic analysis of several basins for the evaluation of the statistical occurrence and magnitude of floods. Within such analysis he has coordinated the acquisition of data input, implemented numerical models, realized statistical simulations of the runoff process.*

*In the field of **hydrogeology**, he has been involved in the executive design of several earthfill, rockfill and concrete dams. In such projects he has carried out stability and seepage analysis implementing both bi and tri-dimensional numerical models.*



PROFESSIONAL EXPERIENCE:

Since **2005 to date**, he has been working fully employed for SC SEMBENELLI CONSULTING srl as hydraulic engineer, mainly involved in the hydraulic, hydrologic and hydrogeological aspects of every project.

In **2009** he designs the new bottom outlet of the **Val Noci Dam** (Genoa), commissioned by MEDITERRANEA DELLE ACQUE, dimensioning the main conduit and the control gate.

In the same year (**2009**) he's involved in the **Preliminary Project** of the **Agua Linda Hydroelectric Project** (Venezuela), as part of the "II Desarrollo Uribante-Caparo" plan, commissioned by EDELCA (National Energy Agency of Venezuela), taking care of the design of the intake work, penstocks, surge shaft and power house turbines.

In the same year (**2009**) he's involved in the **Feasibility Study** of four navigation dams along the **Po River**. Within the study, commissioned by INFRASTRUTTURE LOMBARDE (Regione Lombardia), he takes care of all the hydraulic works, selecting and dimensioning the spillway, navigation lock and fishway.

In the same year (**2009**) he's involved in the **Executive Construction Project** of the **Chaparral Hydroelectric Project** (San Salvador), commissioned by CEL (Hydropower Energy Agency of El Salvador), designing and calculating all the hydraulic works: gated spillway (capacity 6500 m³/s), stilling basin, bottom outlet, intake tower and diversion tunnel. Within the project he coordinates a physical model investigation of the spillway performance with a 1:70 scale model constructed at the Hydraulics Experimental Station of the University of Pisa.

In **2008** he's involved in the **Final Construction Project** for the protective measures of the **Pal Landslide** (Sonico, BS), commissioned by PROVINCIA DI BRESCIA, performing a comprehensive hydrologic and hydraulic analysis of the **Val Rabbia** river basin. Within the project he implements a one dimensional numerical model for steady and unsteady flow analysis and for sediments transport evaluation.

In **2007** he's involved in the **Preliminary Project** for the rehabilitation and maintenance of the **Lago Lungo Dam** (Genova), owned by MEDITERRANEA DELLE ACQUE, designing the new gated spillway and stepped chute energy dissipator as part of the upgrading works to cope with modified hydrologic forecast.

In the same year (**2007**) he's involved in the **Preliminary Project** of the **Cuira River Dam** (Venezuela), as part of the "TUY IV" plan for upgrading and enhancing the Caracas water supply system, commissioned by IDROCAPITAL (Hydraulic Resources Agency of Venezuela). Within the project he carries out the design of the intake tower, outlet works, diversion tunnel, gated spillway (capacity of 7000 m³/s) and ski jumping energy dissipator.

In the same year (**2007**) he designs the new labyrinth spillway and the bottom outlet of the **Lago Badana Dam** (Gorzente, AL), owned by MEDITERRANEA DELLE ACQUE, as part of the **Final Construction Project** for the functional rehabilitation and upgrading of the dam. Within the project



he coordinates a physical model investigation of the spillway performance with a 1:70 scale model constructed at the Hydraulics Experimental Station of the University of Padua. During the **Preliminary Project** he also takes care of implementing an extensive seepage numerical model of the dam foundations.

In **2006** he designs the new morning glory spillway of the **Val Noci Dam** (Genoa), owned by MEDITERRANEA DELLE ACQUE, as part of the **Executive Construction Project** for the maintenance and upgrading of the dam. In addition, he coordinates a physical model investigation of the spillway performance with a 1:70 scale model constructed at the Hydraulic Experimental Station of the Hydraulics and Glaciology Laboratory of Zurich Polytechnic (CH).

In the same year (**2006**) he's involved in the **Preliminary Study** for the performance analysis of the **San Valentino alla Mutta Dam** (Bozen) and the following **Final Construction Project** for the functional rehabilitation of the dam. Within the project he designs the jet grout curtain, the waterproofing geomembrane and the drainage system by implementing an extensive seepage numerical model of the dam body and foundation.

In **2005** he implements a three-dimensional numerical model for evaluating the seepage through the abutments of the **Borde Seco Dam** (Venezuela) as part of the works for constructing a deep concrete cut-off in cooperation with TREVI spa.

In the same year (**2005**), he's involved in the **Preliminary Project** of the **Doradas Hydroelectric Project** as part of the "II Desarrollo Uribante-Caparo" plan (total installed capacity 480MW, cost estimate 900 Millions €), commissioned by EDELCA (National Energy Agency of Venezuela). Within the project he takes care of designing the intake tower, penstocks, surge shafts, turbines and the spillway serving a 200 m high rockfill dam.

In **2005** he's involved in the **Executive Construction Project** of the **Kerrada Dam**, commissioned by AMBT (National Electric Agency of Algeria), carrying out an extensive hydrologic investigation of the water basin and taking care of designing the spillway and the bottom outlet.

From **April 2004 to May 2005** he works for ACCENTURE Company assigned at SNAM GAS client, taking care of the design and implementation of IT platform (SAP based).

In **2003** cooperates at the "Studio Tecnico Berro e Damiano" taking care of the design and calculations of concrete structures (Bordighera, IM).

PUBLICATIONS

[1] Upgrading of Val Noci and Badana Spillways to Cope with Modified Hydrological Forecast – 3rd ICOLD Congress, Brasilia 2009 (with P. Sembenelli).