



ENVIRONMENT

Environmental and territorial design
and monitoring for infrastructures integration.



SINA



Over the years, **SINA** has improved its organization in such a way to guarantee the control and the management over various context issues, obtaining a unique and consolidated experience for the environmental sector. Studies, criteria and methods have been developed to be integrated with the infrastructure design (phase) since the beginning of their concept.

The **Environmental Technical Department** manages the study and design of the measures aimed at guarantee the better infrastructures integration with the existing territory, including the infrastructures pertinences and plants; the aim is to protect the surroundings during construction and operation, embracing all of the phases, starting from the initial idea the start-up of a new infrastructure, to continue during the time in order to provide support for environmental management and adaptation.

After this analysis, the Department makes assessments on impact and integration, as well as environmental studies in general, studies and design for environmental mitigation and compensation works, final restoration of the worksite areas, site design for recovery and storage of the excavated materials. It also draws up characterization plans and projects for reclamation, recovery and enhancement of contaminated sites in order to safeguard the soil, the surface and the underground waters.

Subsequently, this Department implements technical progress studies aimed at monitoring the innovations and the evolutions within the territory and the environment, particularly from the standpoint of the optimization of infrastructure utilization related to the transport and the environmental aspects. It draws up the Environmental Monitoring Plans to be implemented during the construction phases, adaptation, modernization and operation of the infrastructure works and finally draws up the Environmental Management System manuals for the worksites, including the initial environmental analysis and the related procedures and operating instructions. It also manages the activity of operational coordination and implementation monitoring activities (before, during and after all works) related to the infrastructure works, together with environmental audits of worksites.



Environmental studies and designs

SINA is interested in:

- Environmental pre-feasibility and feasibility studies, impact studies, assessments and designs of the siteworks.
- Landscape integration studies and reports.
- Final design of environmental mitigation and compensation works.
- Planning and design of quarries necessary for backfilling activities.

Special attention is dedicated to the construction phases, identifying both the significant context aspects related to the worksite activities (noise, atmosphere, vibrations, light pollution, etc...) and the mitigation measures and monitoring tasks necessary to guarantee a proper management. Moreover SINA plans earth movement balances, evaluating earth quantities necessity, recovering and surplus, maximizing the reuse of aggregates at the worksite and limiting the impact of the works; extraction work is also planned, starting with the verification of the most favorable locations for new quarries, issuing the technical-administrative reports.



“ Detailed territorial analysis
and careful relationship with Institutions
and local stakeholders **”**

Reclamation and management of **lands** and **waste**

In all areas interfering with project works, **SINA** records the deteriorated areas and any potentially contaminated site in order to identify critical situations and to initiate the necessary reclamation operations, before the beginning of the site works. In this context, SINA develops all the activities indicated by national applicable Codes, such as:

- Execution of preliminary environmental surveys.
- Preparation of characterization plan.
- Assessment of site specific risk analysis procedure.
- Design and planning of safety, protection and/or reclamation actions.

SINA identifies the companies at considerable risk of accidents, in order to localize any interference with the projected works, evaluating the method of risk solving to guarantee both the admissibility of the infrastructure in the risky sites or establishments, and the appropriate safety conditions to be respected in the event of an accident.

SINA also supports the Client in the assessment process of reusing soil and rocks from excavations during the works, preparing survey plans, providing assistance in sampling phase, interpreting the results from the analytic and laboratory tests, drawing up the Utilization Plan pursuant to national applicable codes.

Assistance is provided to Clients concerning waste management, from identifying the most proper procedure until the disposing of wastes in authorized plants. In the event of finding waste, SINA conducts investigations on the type of found material through targeted tests, also aimed to check if the environmental assets, come in contact with wastes, are not contaminated.

As regards excavated material produced, during the design stage SINA prepares the documentation which includes methods for managing materials from site to final destination and provides the necessary support for managing materials in the operational phase.



Archeological studies and investigations

“ Development of specific Territorial Information Systems as platforms for consultation and data exchange ”

SINA, making use of the collaborating with qualified archeologists, has developed a specific expertise in Preventive Archeology, dealing with:

- Preventive examination of the archeological site in order to evaluate the archeological risk.
- Planning of preliminary investigations.
- Investigation activities and extension of archeological excavation.
- Implementation of the activities in support of excavation;
- Fulfillment of the activities related to restoration, preservation, enhancement and disclosure of archeological finds unearthed during excavations.

Environmental monitoring and audits of worksites

SINA manages both the planning phase of the work, through the preparation of the environmental monitoring plan, (which defines the characteristics and frequency of surveys, the methods for returning the data and the plan for intervention, and the monitoring phase, through the coordination and management of all of the important phases (before, progress and after work), the organization of databases and their periodic updating).

SINA has acquired specific, considerable skills in monitoring all environmental aspects: sound and electromagnetic pollution, transmission of vibrations, atmospheric emissions, impact on soil and subsoil, impact on underground and surface waters, impact on vegetation, flora, fauna, ecosystems and landscape, impact in social terms.

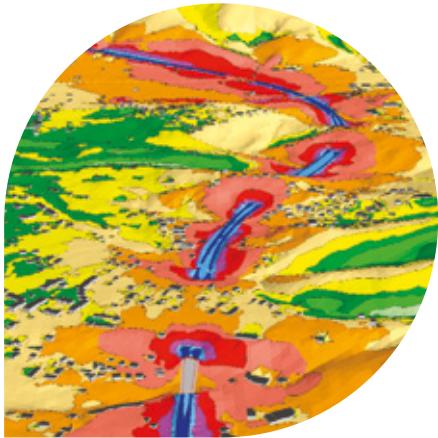
Assisting Monitoring, SINA also performs the environmental auditing of worksites, allowing to forecast main interactions of the works with the surrounding environment, for each phase of the worksite, verifying the adoption of proper operational practices and coordinating relevant prevention actions, keeping under control all the obligations.

Specialist studies in noise pollution

SINA supervises monitoring, noise studies, preliminary, executive and final designs of mitigation interventions and provides assistance in relations with Territorial Institutions and Ministries, Works Supervision and post-work inspections for large-scale infrastructures.

SINA activities include the realization of the **Noise Rehabilitation Plan** pursuant to the Environment Code applicable for public and private operators of road infrastructures and the studies for requirements set by national codes, in transposition of Directive 2002/49/EC, concerning assessment and management of environmental noise (noise mapping and action plans). Principal lines of design regard quantification of pre-work noise climate, characterization of sources, calibration of simulation model, anticipatory analyses for post-work period, dimensioning and structural and architectural project of the mitigation interventions.

SINA contributed to the drafting of some Legislative Decrees within the Italian regulatory framework on noise pollution (Law 447/95) and, through its participation in works of the Technical Commission (Environment, Infrastructure and Health Ministries), to the implementation of the Presidential Decree No. 142 of 30 March 2004 and to the drafting of the "Regolamento di esecuzione e di attuazione del Codice della Strada" (the Italian roadway implementation regulation).



“ Experience on over 700 km of motorway routes, in the lowland, mountains and on the coast **”**



Principal projects*

CLIENT	DESCRIPTION	AMOUNT OF WORKS (millions of Euros)
A33 AT-CN	A33 highway, Asti-Cuneo - sections 1 and 2.	2030,9
TE	Milan East External ring road (TEEM).	1495,9
SATAP	Section A4. Modernization of A4 highway Turin-Milan.	1159,3
SABROM	Highway Broni-Pavia-Mortara.	864,9
AUTOSTRADA BS-VR-VI-PD	Connection between A4 highway and Valtrompia.	799,0
AUTOSTRADA PEDEMONTANA LOMBARDA	Highway connection Dalmine-Como-Varese-Valico del Gaggiolo; ring roads of Como and Varese - section A8-A9, lot 1.	743,0
EUROLINK	Design of Messina Strait Bridge and road/railway connections in Calabria and Sicily.	700,0
AUTOVIE VENETE	A4 highway, 3rd lane between Gonars (UD) and Villesse (GO) and between San Donà di Piave (VE) and Alvisopoli (VE).	684,3
SALT	Highway A12, 3rd lane between S. Stefano Magra and Viareggio.	583,9
SATAP	Highway Santhià-Biella-Gattinara-A26 Romagnano-Ghemme (Piemonte).	447,9
COCIV	High velocity railway Milan-Genoa, lot Genoa-Novi Ligure.	360,7
PIATTAFORMA TARANTO	Logistic platform, highway connection road, dock and wharf.	173,6
TUNNEL FREJUS	Safety tunnel, lot 2 civil works - Italian side.	97,9
SALT - A12	New interconnection between highways A11 and A12.	59,5
ANAS	Modernization of A3 highway, Salerno-Reggio Calabria - section 3, lot 4.	57,9
AUTOSTRADA DEI FIORI	Transformation of Ventimiglia highway plaza and appurtenances.	43,1
MI SERRAVALLE MI TANGENZIALI	Acoustic mitigation for Cologno Monzese interchange.	31,8
REGIONE LOMBARDIA	Sondrio ring road, from Montagna interchange to Tresivio interchange.	29,3
SCR PIEMONTE	Tortona ring road.	24,9
AUTOSTRADA DEI FIORI	New interchange and highway toll barrier in Borghetto S. Spirito.	20,3
PROVINCIA DI PIACENZA	New southwest Piacenza ring road.	16,3



*Projects produced by Sina directly and/or in partnership.

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