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Professor of Structural Engineering

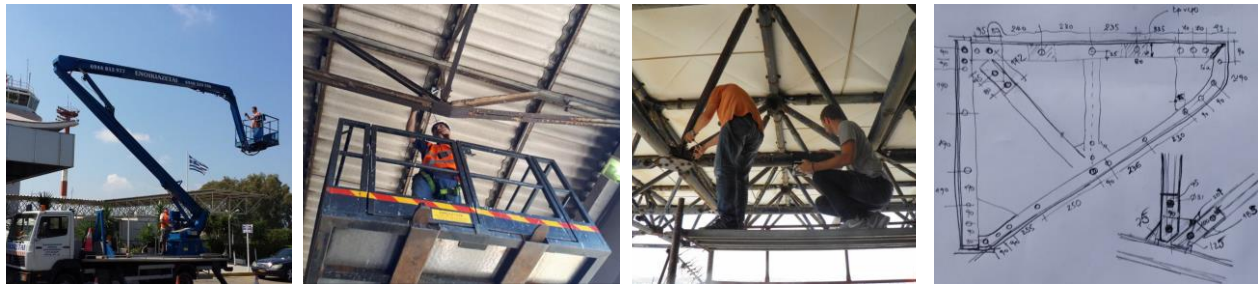
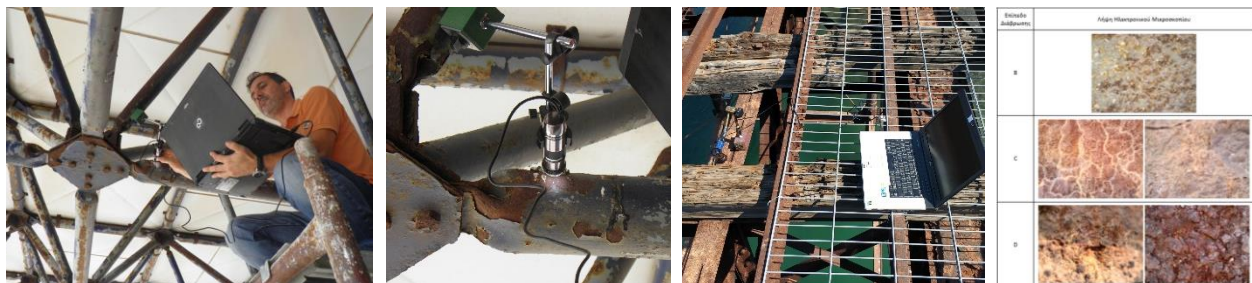
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E-mail: chgantes@central.ntua.gr, chgantes@alum.mit.eduWeb: <http://users.civil.ntua.gr/chgantes/en/> - LinkedIn: www.linkedin.com/in/CharisGantes**SUMMARY OF ACTIVITIES IN STRUCTURAL CONDITION ASSESSMENT OF OLD STEEL STRUCTURES**

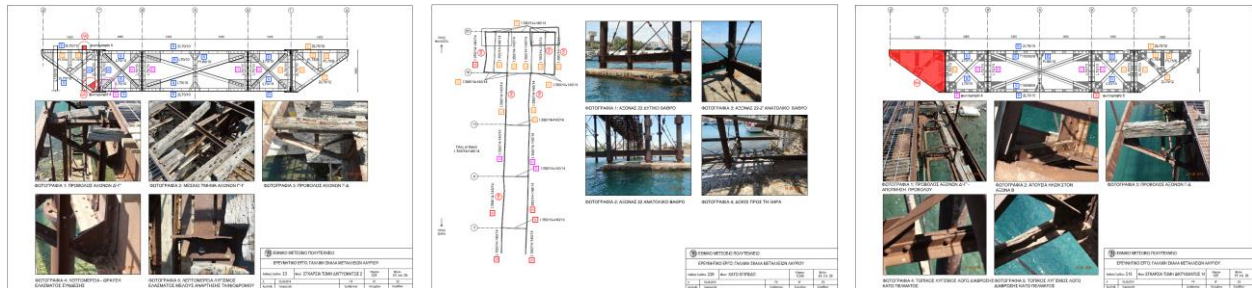
Old steel structures often exhibit deterioration and damage due to insufficient maintenance, corrosion of members and connections, loss of straightness of bars and flatness of plates, or due to accidental loads such as earthquake, fire or vehicle collision. Even if there is no damage, evaluation of the available bearing capacity is necessary in cases of change of use or of live loads. For this evaluation it is necessary to record and appraise possible damage as well as assess the mechanical characteristics of the materials. Towards that goal, the research team of the Institute of Steel Structures at NTUA combines a wide range of on-site measurements, laboratory tests and computational simulations.

Structural survey of old steel structures*On-site corrosion measurements with electronic microscope**On-site hardness measurements for approximate evaluation of mechanical characteristics*

On-site measurements of paint and corrosion protection thickness



Structural damage survey drawings



On-site collection of specimens for laboratory testing



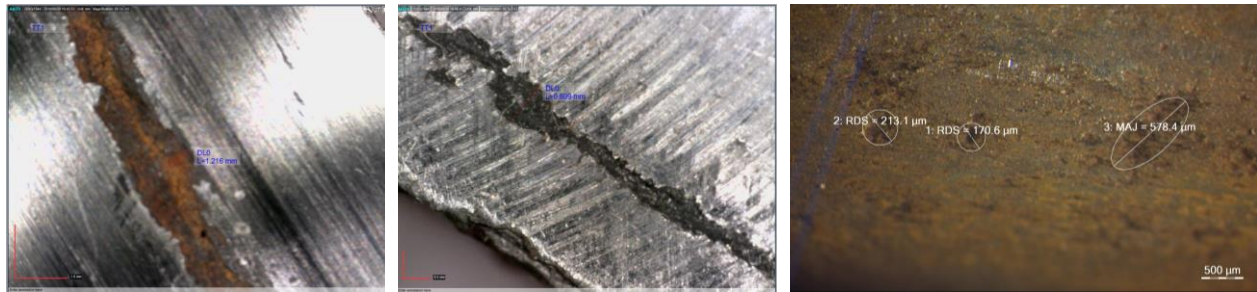
Preparation of specimens and tension tests for evaluation of mechanical characteristics



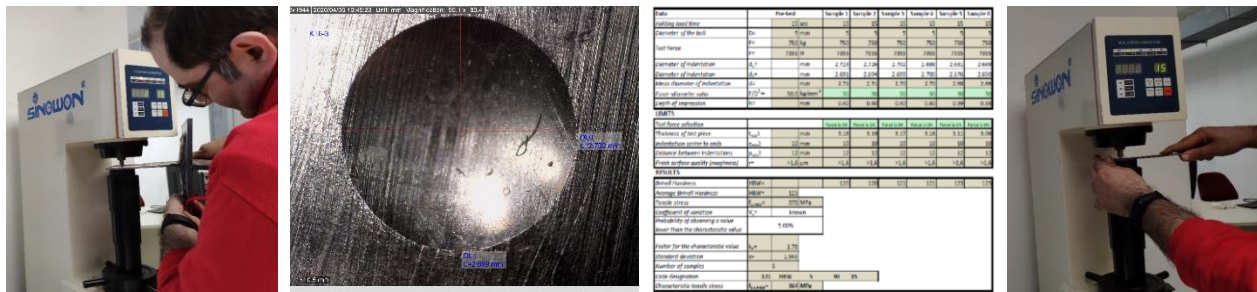
Laboratory tests for evaluation of strength of bolts and welds



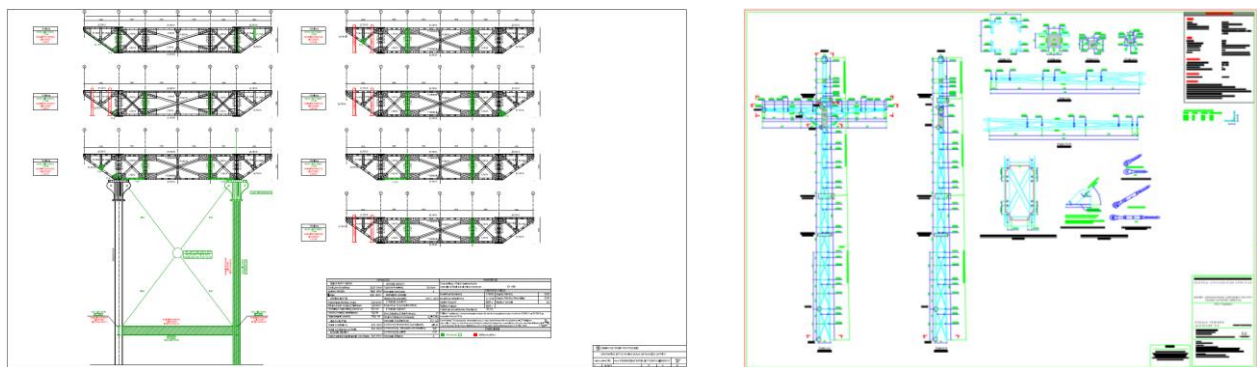
Laboratory electronic microscope tests



Laboratory hardness measurements for approximate evaluation of mechanical characteristics



Rehabilitation drawings



DESIGN AND CONSULTING ACTIVITY

- Consultant for the structural condition assessment of old steel structure supporting the deck of the historical bridge providing access to the Old Fortress of Corfu (2020).
- Consultant for the structural condition assessment of guyed steel towers in Akrotiri Base, Cyprus (2020).
- Evaluation of mechanical characteristics of typical steel specimens of old steel structures in airplane parking and maintenance hangar at the old Hellinikon Airport in Athens, Greece, by means of on-site measurements, experimental tests and statistical evaluation (2020).
- Evaluation of mechanical characteristics of typical steel specimens of old steel structures at the Educational Center of the Greek Fire Department in Nea Makri, Greece, by means of on-site measurements, experimental tests and statistical evaluation (2020).
- Consultant for the structural design of replacement of the guyed tower “Steel Cross” in the Old Fortress of Corfu due to severe deterioration of the old structure (2019).
- Evaluation of bearing capacity and design of strengthening measures of the steel structure of the “French Dock”, dating back to 1885, serving loading purposes on ships of the French Lavrion Mining Company, in Lavrio, Attica, Greece (2018).

- Consultant for the structural assessment and evaluation of necessity of strengthening of old steel structures of ore storage facilities and loading dock in industrial facilities of “Hellas Gold” in Stratoni, Chalkidiki (2017).
- Consultant for the structural assessment and evaluation of necessity of strengthening of the steel roof of Corfu Airport in Greece (2016).
- Consultant for the structural assessment of retractable membrane roofs and supporting steel structures of Avenue Mall, in Athens, Greece (2015).
- Consultant for the evaluation of available bearing capacity and strengthening of old steel cement loading tower damaged due to corrosion and ship impact in Vasilikos, Cyprus (2012).

FUNDED RESEARCH PROJECTS

- “Panoptis - Development of a Decision Support System for Increasing the Resilience of Transportation Infrastructure Based on Combined Use of Terrestrial and Airborne Sensors and Advanced Modelling Tools”, H2020-MG-2016-2017/H2020-MG-2017-Two-Stages, budget 4,990,800.00€, Dr. Philippe Chrobocinski (Airbus Defense and Space SAS) as P.I. and Assoc. Prof. A. Doulamis as P.I. of the NTUA research team (School of Rural and Surveying Engineering, NTUA) (2018-2021).
- “Documentation and analysis of aging factors in buildings, influence on the bearing capacity and solutions”, funded by the Foundation for the Advancement of Research of Cyprus, P.I. of the Greek side (1999-2001).
- “Seismic fragility of ancient monuments”, Greece-Cyprus Research Cooperation, P.I. (1996-1998).

SUPERVISION OF DOCTORAL THESES

- Vasilis Papavasileiou (in progress), "Evaluation of the Structural Vulnerability of Existing Prefabricated Steel Bridges".
- Katerina Ntaifoti (in progress), "Structural Condition Assessment of Old Steel Structures".