quaderni di assorestauro

QA

ANNO01NR02
OTTOBRE 2012

ACTA OF THE INTERNATIONAL WORKSHOP

VENICE
MILAN

Programma MAE-Regioni-Cina

CULTURAL HERITAGE, THE SOURCE OF WISDOM, HERITAGE OF ALL HUMANITY

30 OCTOBER – 31 OCTOBER

4 NOVEMBER – 6 NOVEMBER

Project sponsored by

RegioneLombardia

assorestauro

Patrimonio Culturale
文化遗产

REGIONE DEL VENETO

Veneto Promozione

Quaderni di Assorestauro

QA

Anno 01 Numero 02
ottobre 2012

edited by
Andrea Grilletto

Graphic Project

CUSTOM-ART
GRAFICA & STAMPA

Viviana Maria Lucia Volpini
www.custom-art.it

Translation by
Marta Grilli

index

sponsor presentation

_ presentation of “Regione Lombardia” 5
_ presentation of “Assorestauro” 7

preface

_ Assorestauro... the International concept of conservation... - Andre Griletto 9

management of CH

_ Milan in art restoration - Press Office Assimpredil - ANCE 11
_ FAI - Fondo Ambiente Italiano - Press Office 14
_ FONDAZIONE CARIPLO - Press Office 27
_ EUCENTRE European Centre for Training and Research in Earthquake Engineering - Fabio Germagnoli 30

architectural restoration

_ The restoration of the Teodolinda Chapel in Monza - Anna Lucchini 33
_ The “Klimt Villa”, Vienna. Restoration of the great painter’s studio - Press Office Röfix 36
_ Four historic churches and an 18th century palace restored to their original splendour - Adele Sironi e Marco Paolo Servalli 38

museography

_ Louvre. Diaphanous like soap bubbles,impenetrable like safes: Goppion - Andrea Sartori 42
_ Planning and realization of a multidisciplinary laboratory for the restoration and conservation of Cultural and Historical Heritage - Vittorio Bresciani 44

lighting

_ Energy saving in protected historical buildings. The domotised lighting system of the Cathedral of Nardò (Lecce) - Stefano Pallara 48
_ Light at Art’s service - Massimo Rota 52

International Projects

_ MED ART – Emilia Romagna Region - Assorestauro 54
_ Russian School of Restoration - GUP CNRPM - Assorestauro (Central Scientific Restoration Project Workshop) 56

special thanks

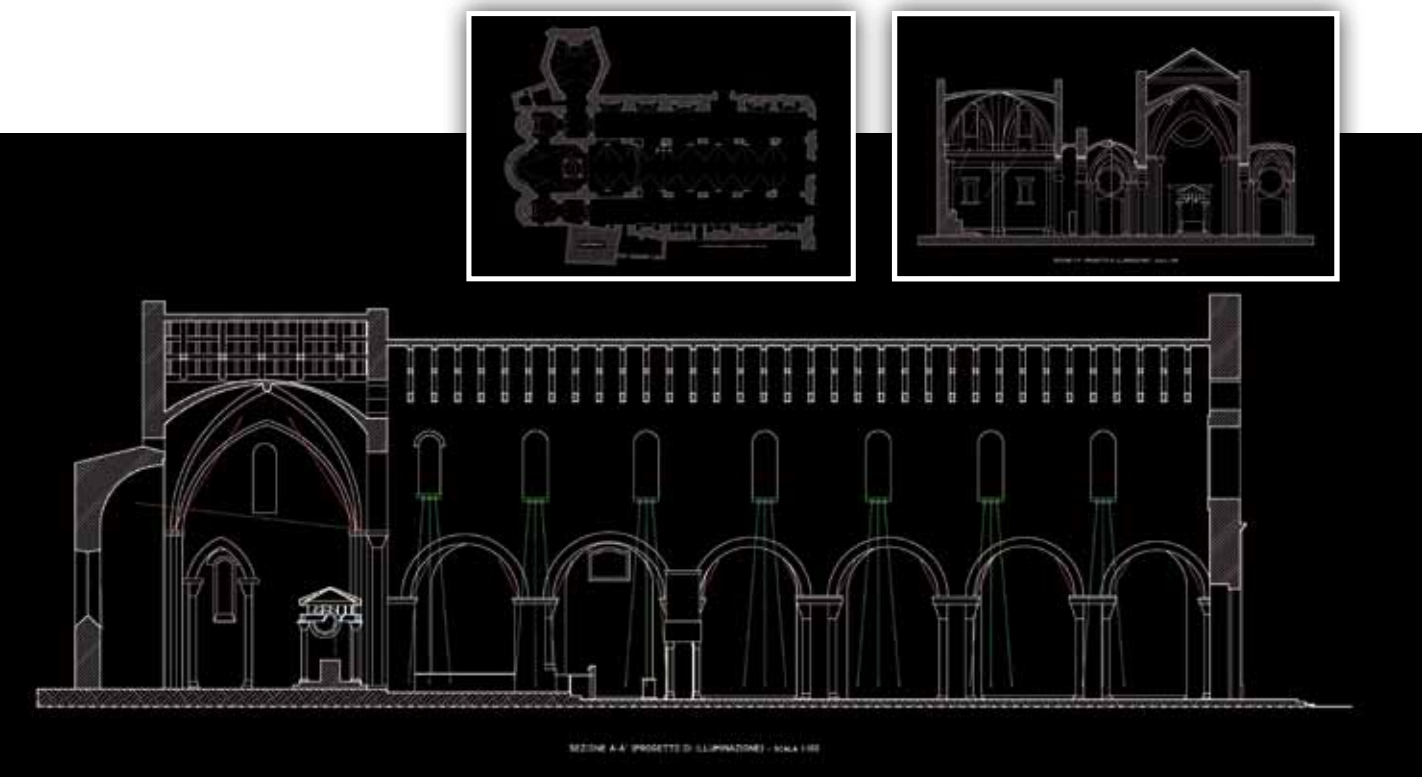
_ “Convento dell’Annunziata” Guest House in Abbiategrasso - Alberto Ambrosini 58
_ Museo del Novecento 59
_ IPSAR Vespucci 59

lighting

Stefano Pallara
Senior associate
info@studioaerrekappa.com

Energy saving in protected historical buildings

the domotised lighting system of the Cathedral of Nardò (Lecce)

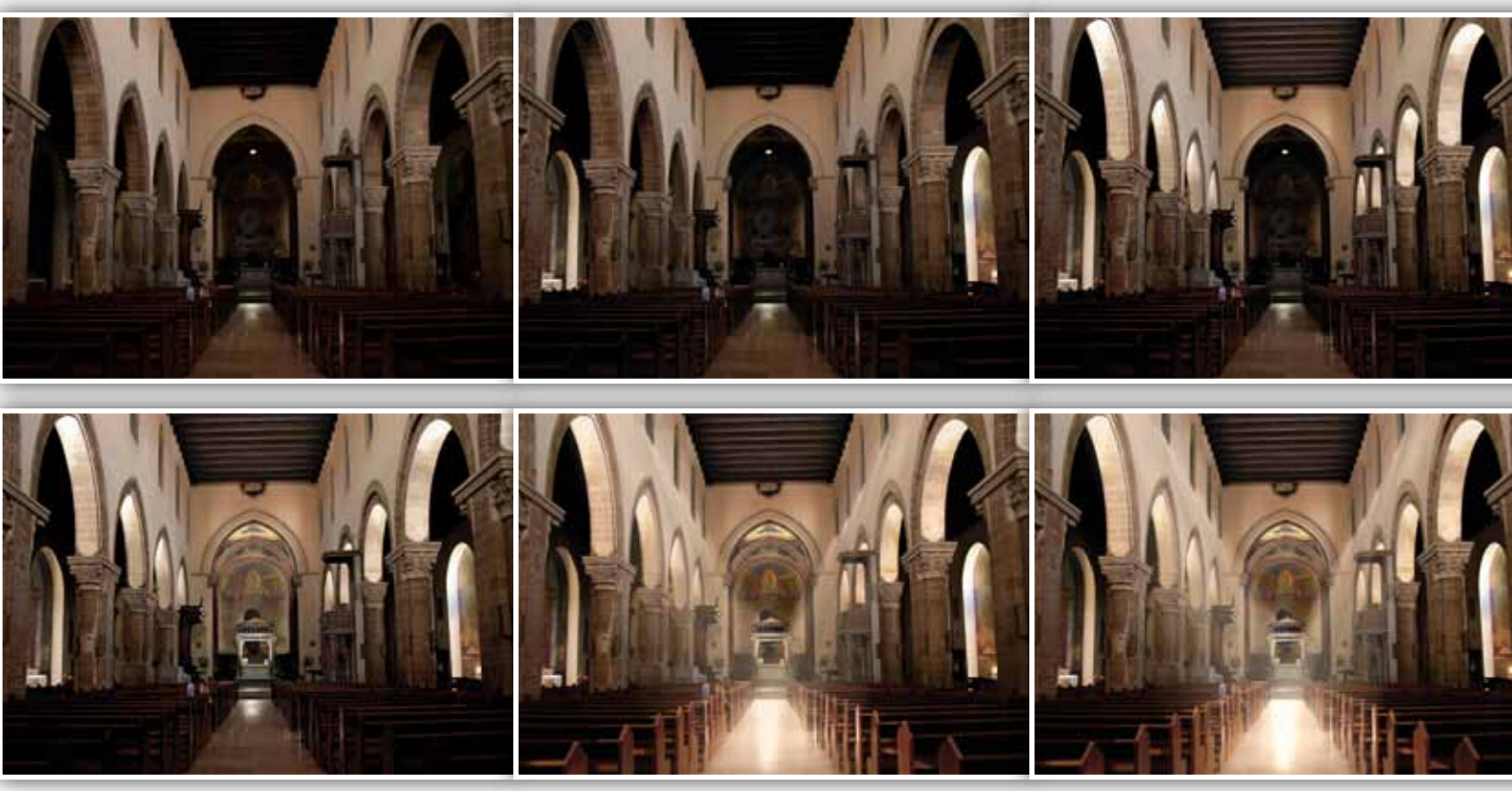


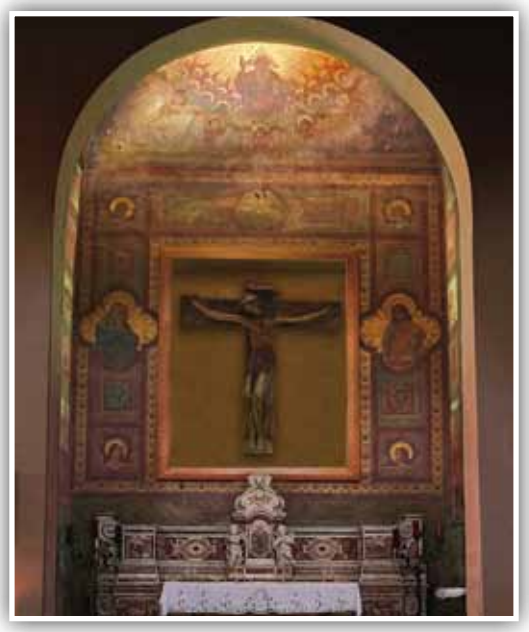
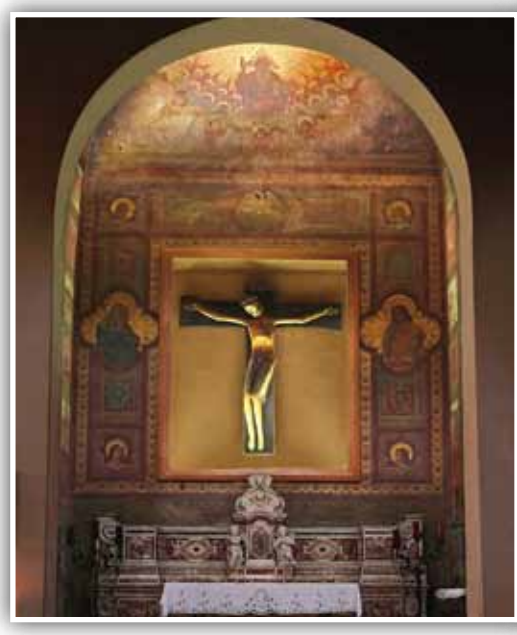
Our goal was to use domotics to transform the Cathedral of Nardò into a "smart building", a first step towards the creation of a "smart city".

The original system of the Cathedral of Maria SS.ma Assunta of Nardò probably dates back to the VII-XI centuries. The first significant restoration intervention was carried out by the Benedictine monks after the 1245 earthquake. The oak crucifix dates back to more or less the same period: among the oldest wooden crucifixes in Southern Italy, it is commonly referred to as the "Black Christ". Further restoration was carried out after the 1350 and 1456 earthquakes, followed by other interventions completed at the hands of various bishops, such as the Neapolitan bishop Antonio Sanfelice (1708-1736), supported by his brother Ferdinando, a famous architect. In 1892, bishop Giuseppe Riccardi decided to start to demolish the Cathedral, but as soon as the first wall surfaces came down, the original medieval structure

was unveiled: the baroque stuccos which had been disguising the ancient cathedral to follow the trends of the past were therefore removed and bishop Riccardi appointed the famous painter Cesare Maccari from Siena to fresco the chancel, the apse and the ogival vault in the presbytery.

The design of the new lighting system of the Cathedral mainly focuses on energy saving systems and the compliance of the chosen illuminating devices with the real needs of the building, through a careful selection of the best solutions, in terms of luminous efficacy, Colour Rendering Index, life, luminous flux and colour temperature, to be positioned and angled according to the specific needs of each single room for the best luminous effect. The chosen illuminating devices are characterised by extreme flexibility, allowing to modify the luminous fluxes through a continuous regulation of the load; moreover, using both halogen and LED lamps (Light Emitting Diode) with dual KNX and DALI control systems (Digital Addressable Lighting Interface), the best illuminating effect is guaranteed, even for any future requirement. Particularly, *Guzzini Illuminazione* provided important support and assistance in the design of custom illuminating solutions, i.e. ad-hoc devices specifically conceived for the Cathedral and equipped, following our indications, with specific DALI feeders and therefore all adjustable and adaptable to each "functional scenario". Having chosen the BUS system allows to save material, optimise the path of the conduit pipes and carry out quick and simple modifications at any time, simply excluding or adding illuminating sources in a "scenario" or creating brand new "scenarios" by means of elementary programming operations from the

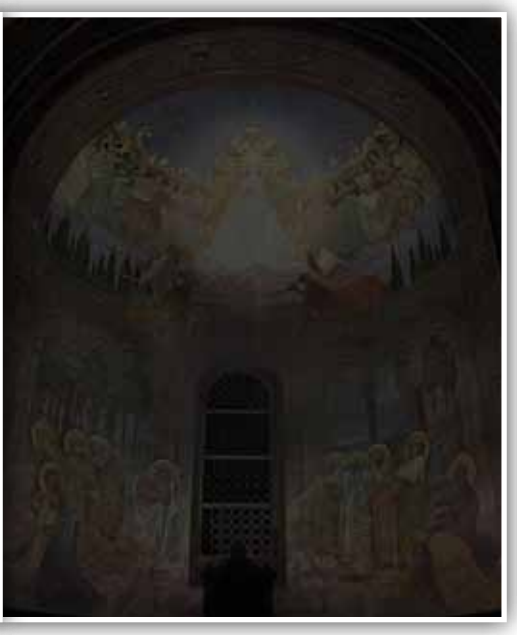


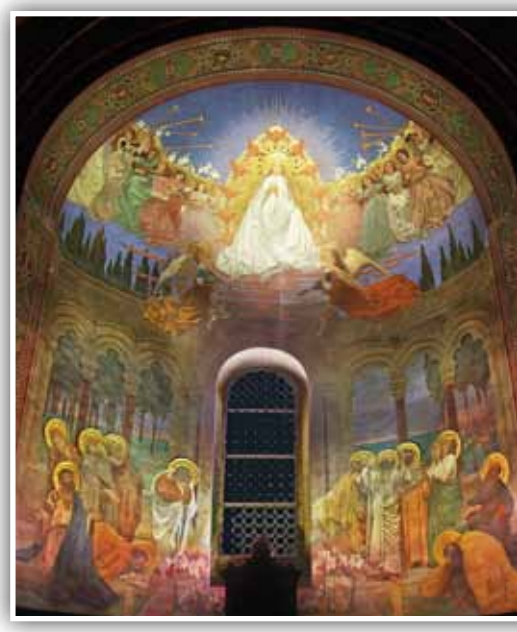




console, without needing a technician, exclusively required if the control unit is to be managed or if an update of the configuration is asked by the Customer.

With specific reference to the Cathedral of Nardò, the (still on-going) qualification process is based on the analysis of a system aimed at providing the building with a new, modern lighting system as well as at optimising consumptions for a remarkable energy saving. For such reasons A DOMOTIC SYSTEM WAS CHOSEN, already experimented in 1998 in the Sanctuary of San Giuseppe da Copertino, one of the first protected sacred historical buildings in Italy to use domotics. In brief, a domotic system is a system for the control and management of electrical or electrifiable apparels and devices, allowing, among other things, to optimise consumptions. By means of an integrated combination of sensors and digital actuators, the systems can be controlled (even remote) through a software, according to given data transmission protocols. Lighting, heating, watering systems, as well as blinds and electrified windows or alarm systems: everything can be controlled through domotics, also referred to as a "smart" system in that, once programmed, it is able to automatically respond to an event or to a different status of the operated device.

With specific reference to the Cathedral of Nardò, the project provides for an electronic system of interconnection and management. In other words, a system of serial communication on conductors with adequate section and isolation so to allow their installation in the same conduit pipes of the power system, with a DALI (open) protocol to manage the illumination of the Cathedral and an electronic system of management and interconnection (on UTP - Unshield Twisted Pair), adequately isolated so to allow its installation in the same conduit pipes of the power system, with a KNX (open) protocol to supervise and light the accessory areas and the managing of over 50% of all the sockets present in both the sacred and auxiliary rooms, controlled and regulated for an optimised energy consumption. The two domotic

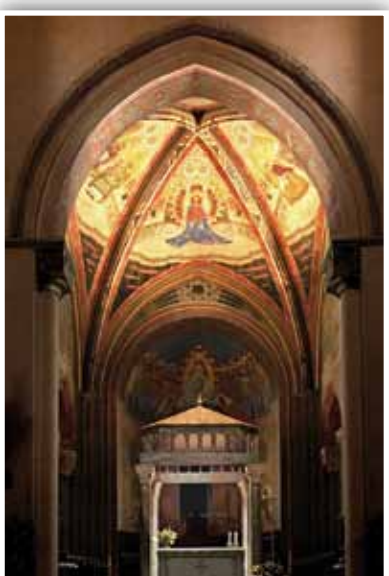




systems are connected by means of specific KNX/DALI gateways and can be programmed by PC (connected through dedicated KNX/USB interfaces), so to guarantee the necessary save of the configuration for an easy reproducibility of the conceived "scenarios" in case of failure. Moreover, further dedicated interfaces (KNX/Internet Gateway and KNX/GSM) allow the systems to be switched on, switched off or controlled (even remote).

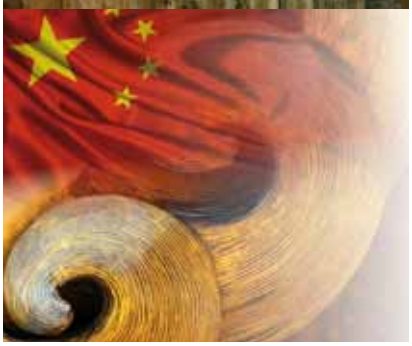
The "functional scenarios" designed according to the needs of the Cathedral (liturgic or not), each of them operated by means of ONE SINGLE CONTROL, will be carried out through lighting devices controlled by a program control unit, which will attribute a specific configuration to each single "scenario", though always modifiable, with no changes in the system infrastructure. All the systems can be controlled via software and be eliminated at any time from one "scenario" and added to another one, or can belong to two or more "scenarios" at the same time with different illumination levels: WITH DOMOTICS THIS IS POSSIBLE! Hence, in the future, should the needs of the Cathedral change, it will be sufficient to update the "scenarios" accordingly and re-programme the system, avoiding masonry works or interventions on the systems, therefore minimising costs and inconveniences.





QA

quaderni di assorestauro



ANNO01NR02