

# MANAGEMENT AND VALORISATION OF THE URBAN LANDSCAPE

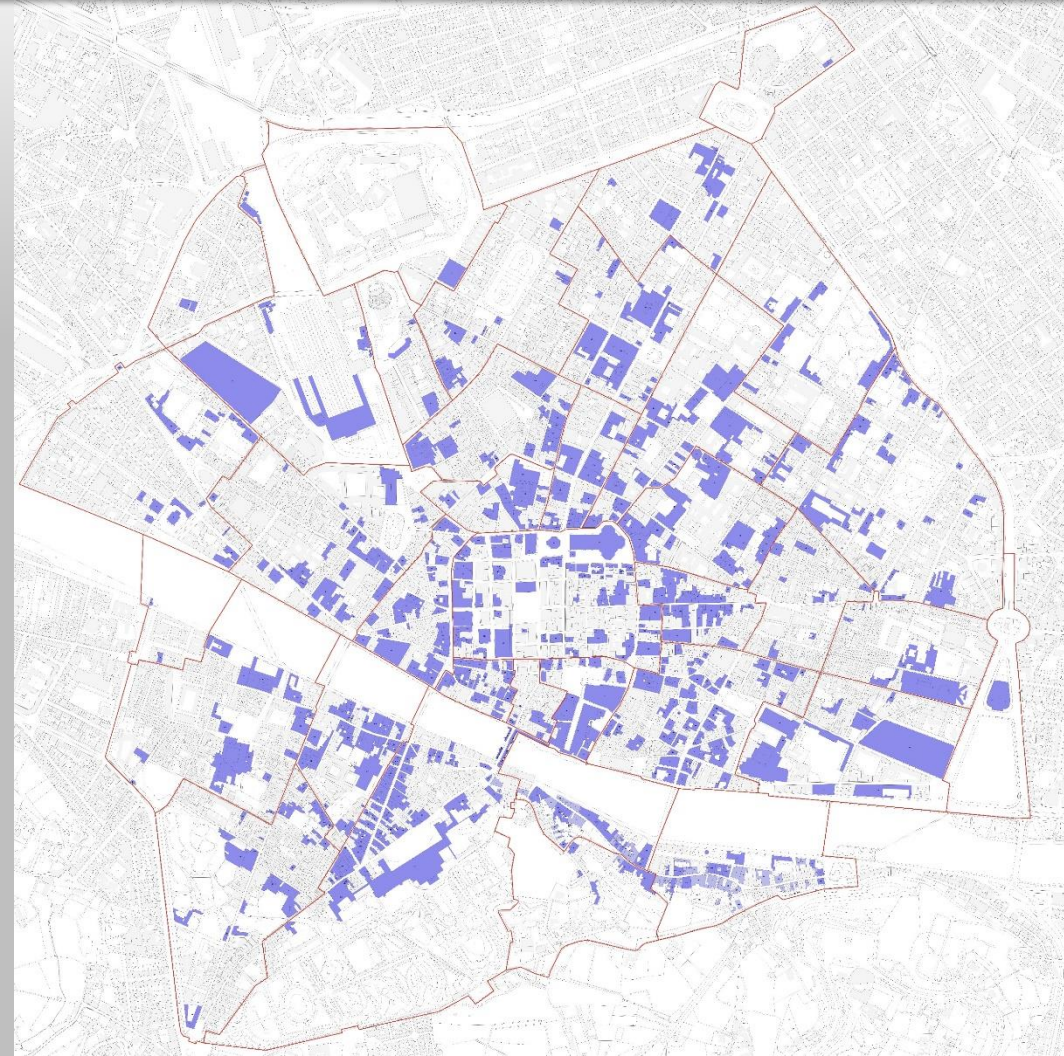
Florence Municipality UNESCO Office started a process of Heritage Impact Assessment for certain projects and their development on the World Heritage site.





# MANAGEMENT AND VALORISATION OF THE URBAN LANDSCAPE

Such analysis will ensure, in line with the method presented in the ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (2011), *measurement of the negative and/or positive impact of one or more projects on the Outstanding Universal Value* of the property and the identification of *measures* required *to mitigate* any potentially negative impact.







# CRITICALITY, HERITAGE MANAGEMENT: MONUMENTS CONSERVATION

HECO (HEritage COlors)

UNESCO Office of the Municipality of Florence and DIDA - Heritage CityLab  
(Department of Architecture of the University of Florence)



General objectives:

- a) to coordinate the operations of maintenance of the monumental complexes
- b) to raise awareness and knowledge of the cultural and historic value of Florence as a World Heritage site

# THE HECO PROJECT

## AN INTEGRATED SYSTEM OF OPEN DATA OF ARCHITECTURE OF THE HISTORIC CENTRE, BASED ON RECOGNITION OF STATE OF CONSERVATION AND OF CHROMATIC LANGUAGE

*It develop guidelines and applications for use in urban prevention and maintenance operations.*

The project ought to be useful for a large fields of application.

- *In the sphere of programmed maintenance and prevention*, the monitoring of operations carried out on the architectural heritage makes it possible to plan future controls and operations, setting alerts when the maximum time between one monitoring and the following one has expired.
- In the framework of management of the art city *it is possible to know the economic requirements for the actions of maintenance and renovation* of the facades of the buildings.
- In the area of planning, *it is possible to know* and visualize *the priorities* of action for a conscientious programming of the maintenance actions.
- In the sphere of urban decor, the survey of the colors of the grounds, the cornices and the basements enables the definition of appropriate methods for the conservation and enhancement of the building facades, with *identification of chromatic matrices, color palettes and material prototypes.*



# TO CATALOGUE VALUE BUILDINGS IN THE HISTORIC CENTRE HAS BEEN USED AN OPEN DATA SYSTEM ON A GEO REFERENCED GIS BASE



The analysis is adopted on a representative urban area especially for typological buildings and materials relevant to the Historic Centre of Florence.

Collection of sample buildings:

- Catalogued: 951 buildings
- Analysed: 319 units of façades

(22% total)



951 Totale schede  
compilate con informazioni *anagrafiche*



888 Edifici vincolati  
con informazioni *anagrafiche*



63 Edifici non vincolati  
con informazioni *anagrafiche*

# EXAMPLE OF BUILDING CURTAIN REPRESENTATION



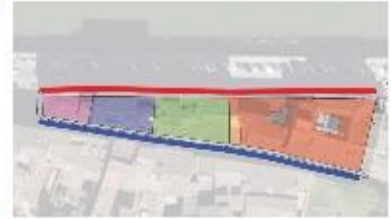
Piazza de' Pitti



Via Maggio



Lungarno Torrigiani



Via de' Bardi





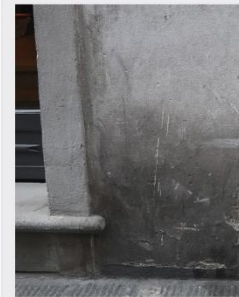
# DECAY PHENOMENA

PERDITA DI MATERIALE



PERDITA DI MATERIALE

APPORTO DI MATERIALE



APPORTO DI MATERIALE

DEGRADO ANTROPICO



ALTERAZIONE MATERIALE





**CRACK & DEFORMATION**  
FISSURE & DÉFORMATION

- CRACK . FISSURE**
- Fracture . Fracture
- Star crack . Fissuration en étoile
- Hair crack . Microfissure
- Craquele . Craquellement
- Splitting . Clivage

**DEFORMATION . DÉFORMATION**

**DETACHMENT**  
DÉTACHEMENT

- BLISTERING . BOURSOULFURE**
- BURSTING . ECLATEMENT**

**DELAMINATION . DÉLITAGE**

- Exfoliation . Exfoliation

**DISINTEGRATION .**  
DÉSAGRÉGATION

- Crumbling . Emiettement
- Granular disintegration . Désagrégation granulaire
- **Powdering, Chalking .** Pulvérulence, Farinage
- **Sanding .** Désagrégation sableuse
- **Sugaring .** Désagrégation saccharoïde

**FRAGMENTATION .**  
FRAGMENTATION

- Splintering . Fragmentation en esquilles
- Chipping . Epaufrure

**PEELING . PELAGE**

- SCALING . DESQUAMATION**
- Flaking . Ecaillage
- Contour scaling . Desquamation en plaque

**FEATURES INDUCED BY MATERIAL LOSS**  
FIGURES INDUITES PAR UNE PERTE DE MATIÈRE

**ALVEOLIZATION . ALVÉOLISATION**

- Coving . Creusement

**EROSION . ÉROSION**

- Differential erosion . Erosion différentielle
- Loss . Perte :
  - of components . de constituants
  - of matrix . de matrice
- Rounding . Erosion en boule
- Roughening . Augmentation de rugosité

**MECHANICAL DAMAGE .**  
DÉGÂT MÉCANIQUE

- Impact damage . Trace d'impact
- Cut . Incision
- Scratch . Rayure
- Abrasion . Abrasion
- Keying . Bûchage

**MICROKARST . MICROKARST**

- MISSING PART .**  
PARTIE MANQUANTE
- Gap . Trou

**PERFORATION . PERFORATION**

- PITTING . PITTING**

**DISCOLORATION & DEPOSIT**  
ALTÉRATION CHROMATIQUE ET DÉPÔT

- CRUST . CROÛTE**
- Black crust . Croûte noire
- Salt crust . Croûte saline

**DEPOSIT . DÉPÔT**

- DISCOLOURATION .**  
ALTÉRATION CHROMATIQUE
- Colouration . Coloration
- Bleaching . Décoloration
- Moist area . Assombrissement dû à l'humidité
- Staining . Tache

**EFFLORESCENCE . EFFLORESCENCE**

- ENCRUSTATION . ENCRÔTEMENT**
- Concretion . Concrétion

**FILM . FILM**

**GLOSSY ASPECT . ASPECT LUISANT**

**GRAFFITI . GRAFFITI**

- PATINA . PATINE**
- Iron rich patina . Patine ferrugineuse
- Oxalate patina . Patine d'oxalates

**SOILING . ENCRASSEMENT**

- SUBFLORESCENCE .**  
SUBFLORESCENCE

**BIOLOGICAL COLONIZATION**  
COLONISATION BIOLOGIQUE

**BIOLOGICAL COLONIZATION .**  
COLONISATION BIOLOGIQUE

- ALGA . ALGUE**
- LICHEN . LICHEN**
- MOSS . MOUSSE**
- MOULD . MOISSURE**
- PLANT . PLANTE**

**ICOMOS-ISCS :**

Illustrated glossary on stone deterioration patterns  
Glossaire illustré sur les formes d'altération de la pierre

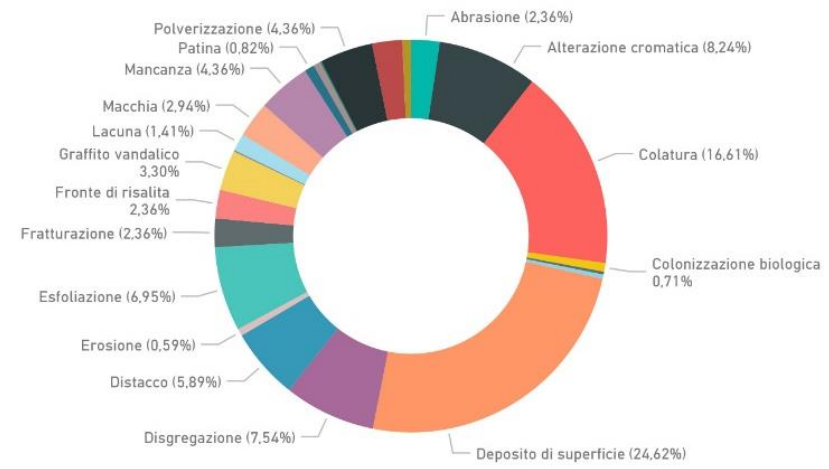
**International standards:**

- Normal 1/80
- Normal 1/88
- UNI 11182/2006
- ICOMOS-ISCS 2008

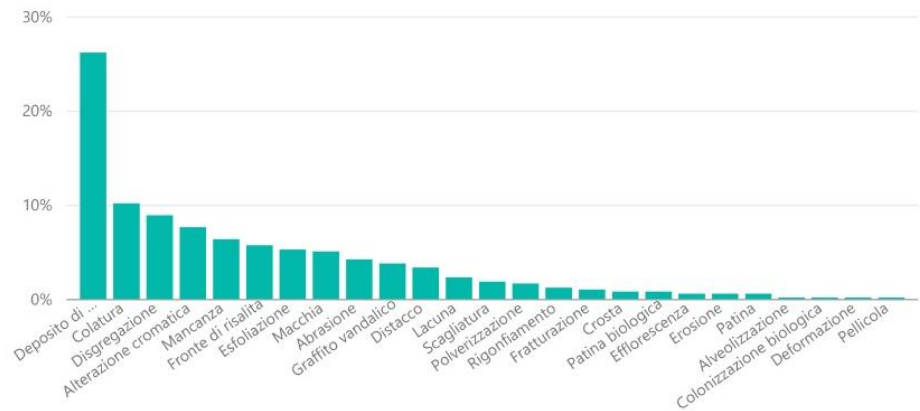
- ALTERATION . ALTÉRATION**
- DAMAGE . DÉGRADATION**
- DECAY . DÉGRADATION**
- DEGRADATION . DÉGRADATION**
- DETERIORATION . DÉGRADATION**
- WEATHERING . ALTÉRATION MÉTÉORIQUE**

# STATE OF CONSERVATION EXAMPLE PERCENTAGE OF DETERIORATION PATTERNS

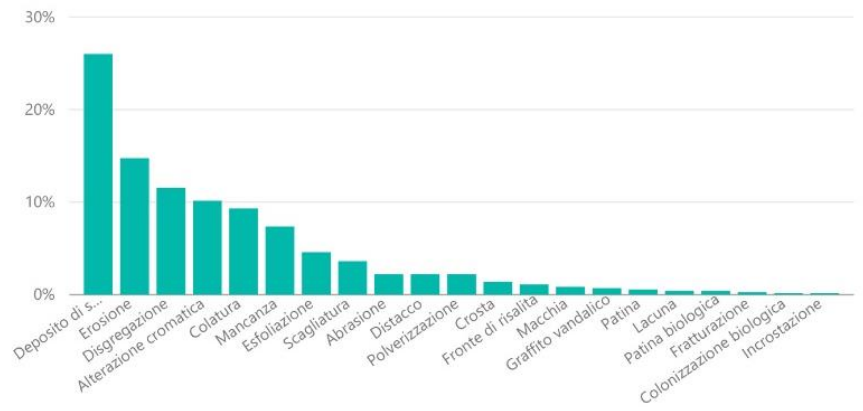
Patologie Fondo



Patologie Basamento

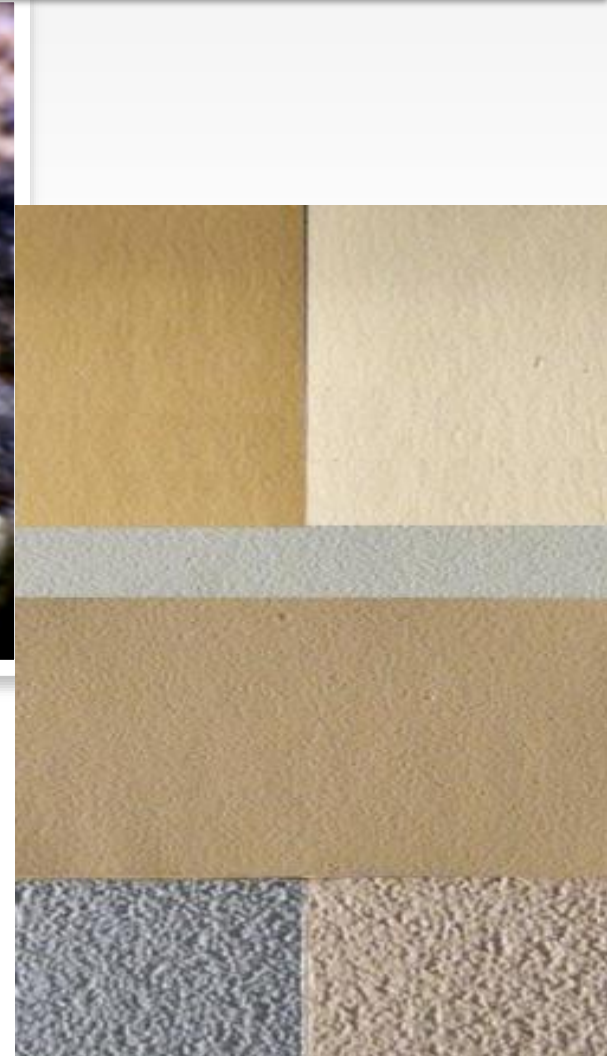
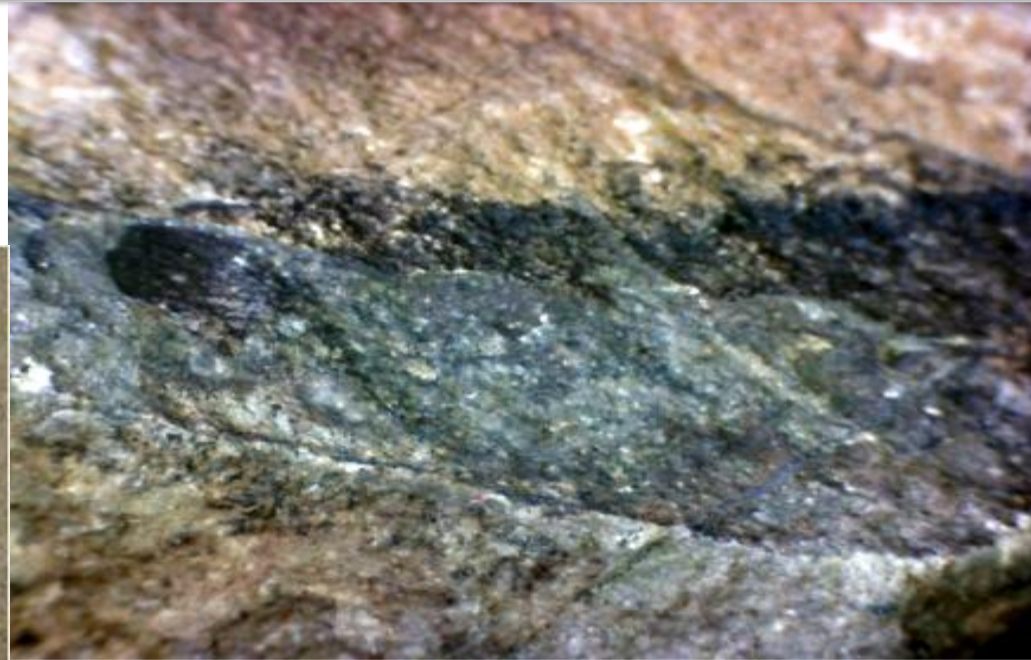
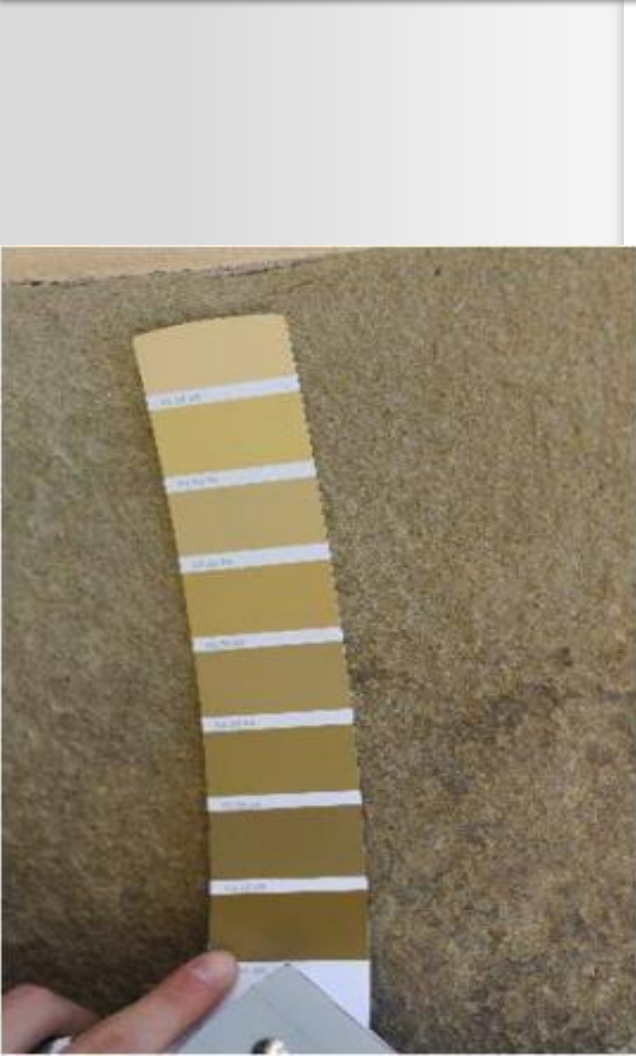


Patologie Cornici





# COLOR SURVEY: AN INSTRUMENT OF KNOWLEDGE

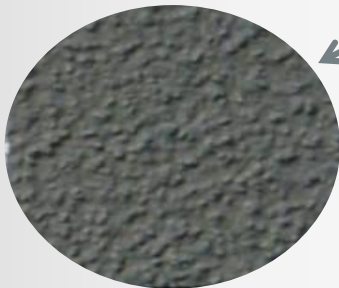


1. Type and character of surfaces
2. Chromatism
3. Architectural language

# TYPE OF SURFACE MATERIALS AND COLORS



*MATRICI CROMATICHE:*  
Wall colors



*MATRICI MINERALI:*  
Base and cornice



# COLOR PALLET



## Legenda dei simboli utilizzati



= fondo



= basamento



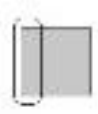
= facciata  
in lapideo



= basamento  
lapideo



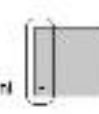
= grafite



= cornice

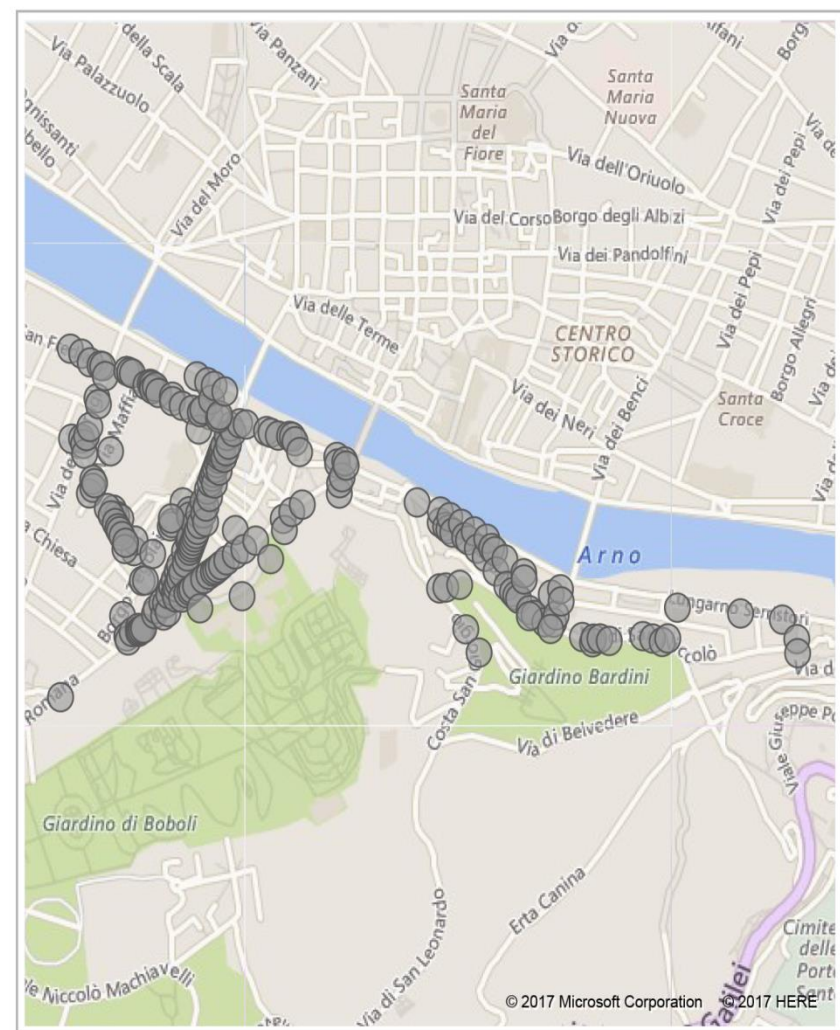
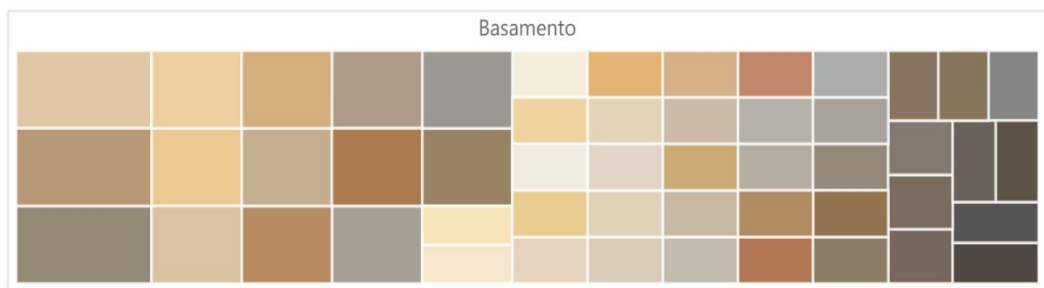
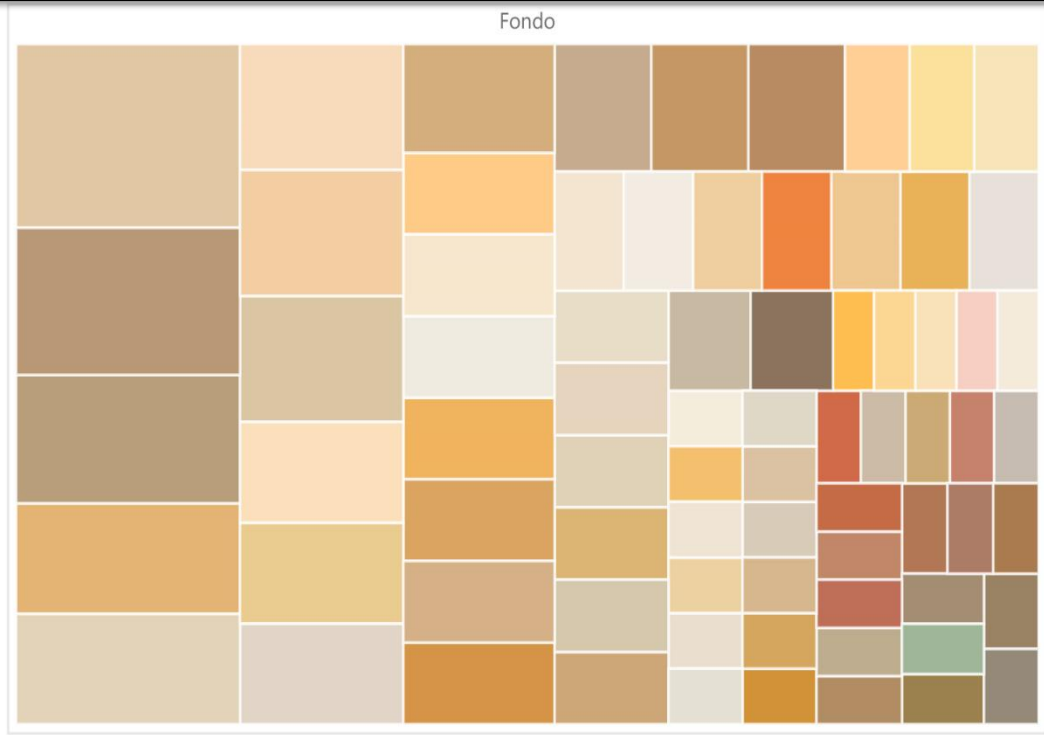


= integrazioni  
e/o superfacciate



= cornice  
lapidea

# HERITAGE COLORS: AN EXPRESSION OF ARCHITECTURAL AND URBAN IDENTITY OF THE CITY, THROUGH THE COLORS THAT ADORN IT AND ASPECTS OF ITS DÉCOR





## PROJECT OBJECTIVES

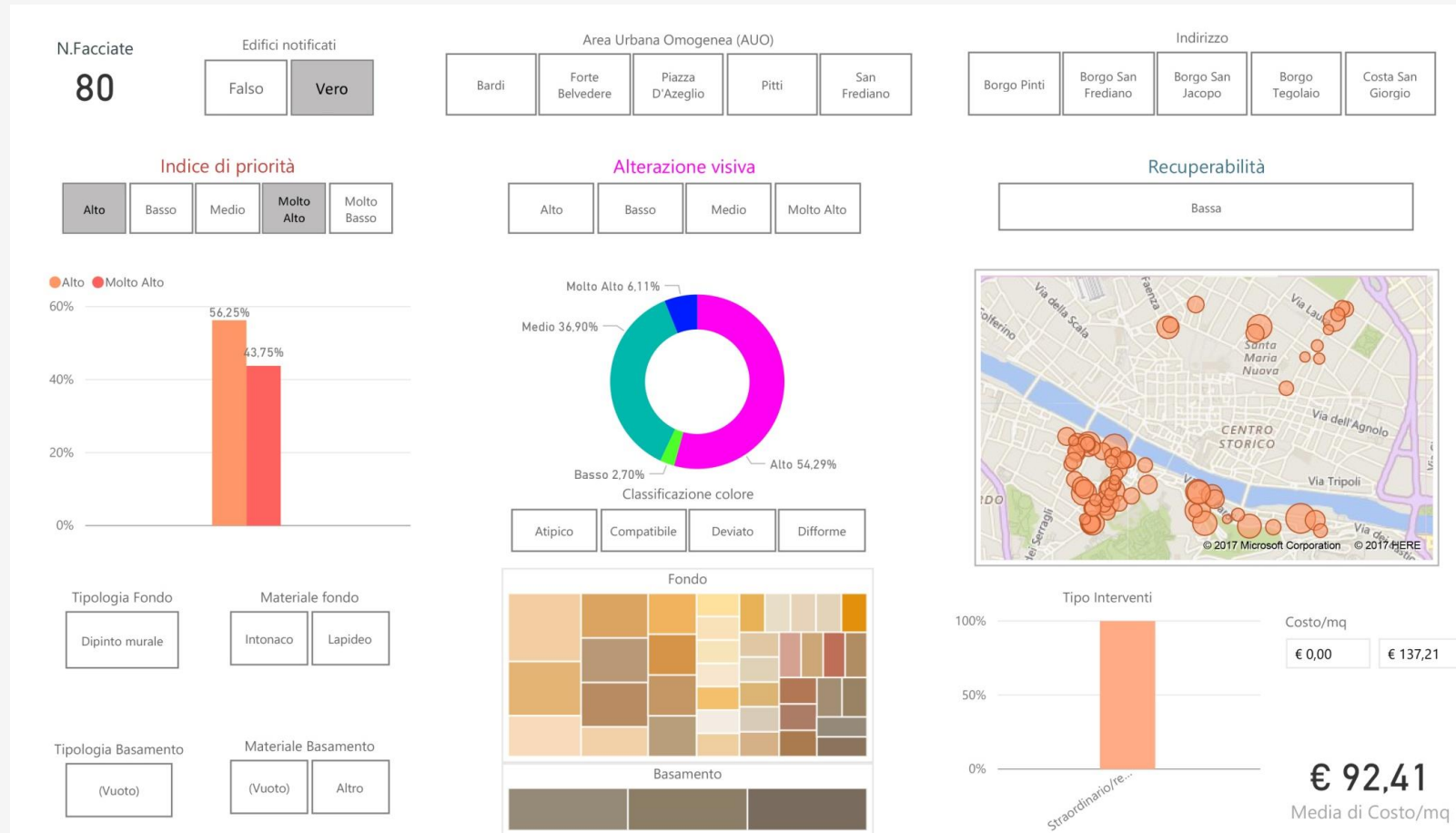
The project achievements are:

- To monitor the state of conservation of buildings and historic gardens.
- To indicate the priorities, the criticalities and the methods for a programmed management.

# GUIDELINES FOR THE PERFORMANCE OF OPERATIONS OF PREVENTION, MAINTENANCE AND CONSERVATION

## PRIORITY:

Estimation of impact on built heritage of the historic centre. Different levels of priority derived from surfaces conservation.

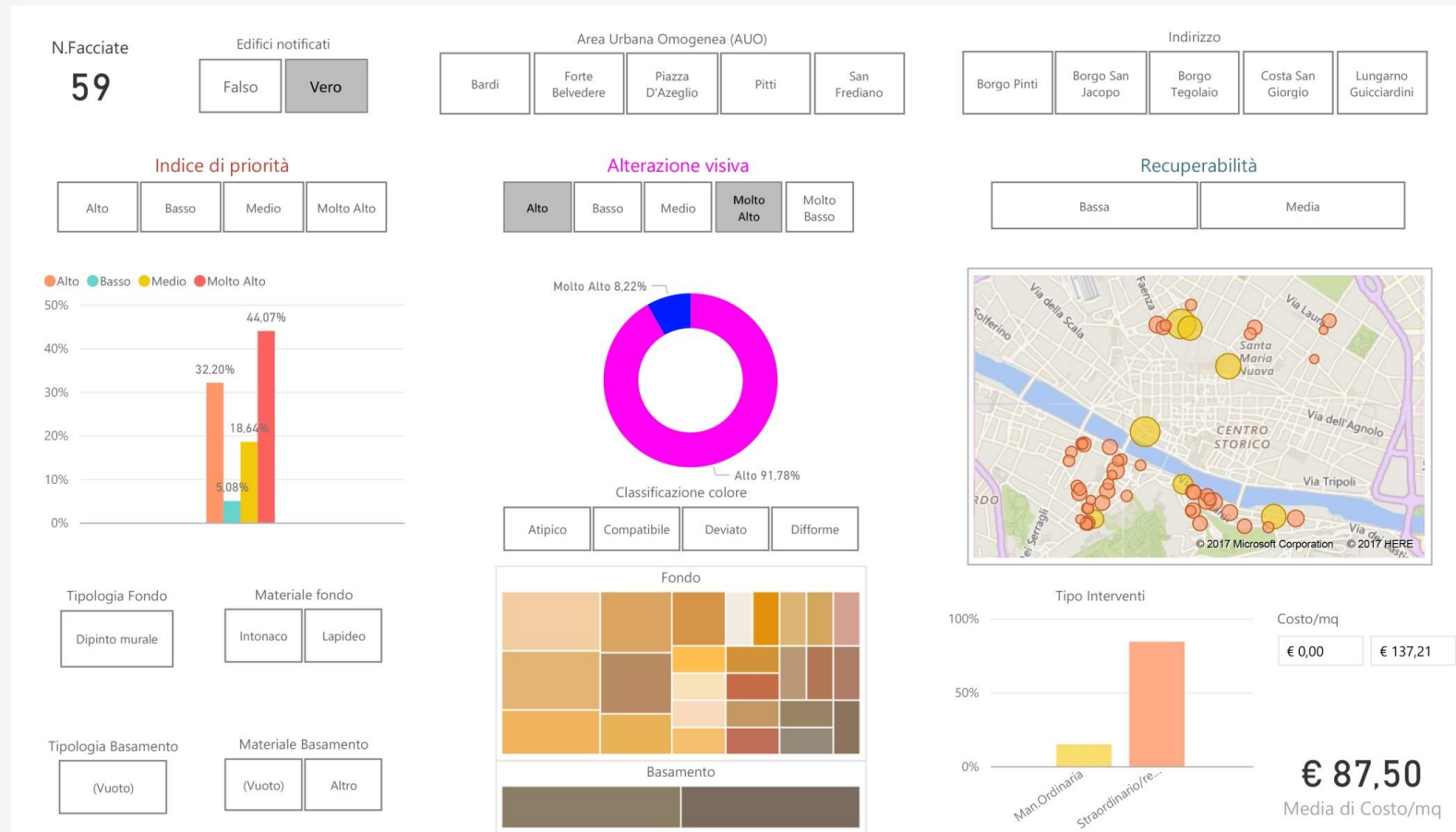




# GUIDELINES FOR THE PERFORMANCE OF OPERATIONS OF PREVENTION, MAINTENANCE AND CONSERVATION

## VISUAL ALTERATION:

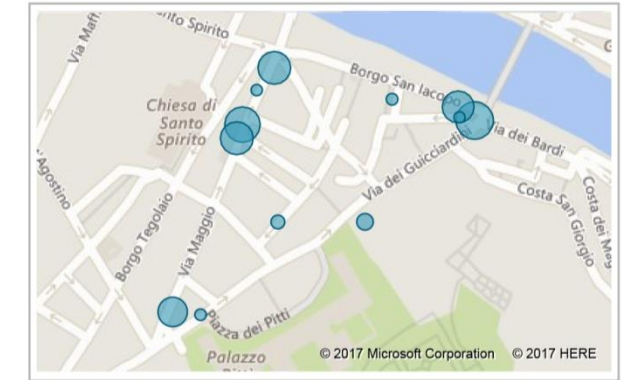
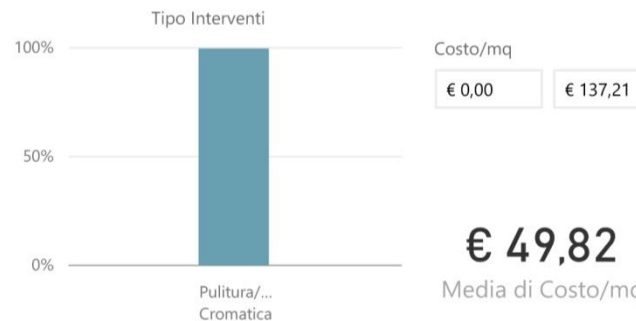
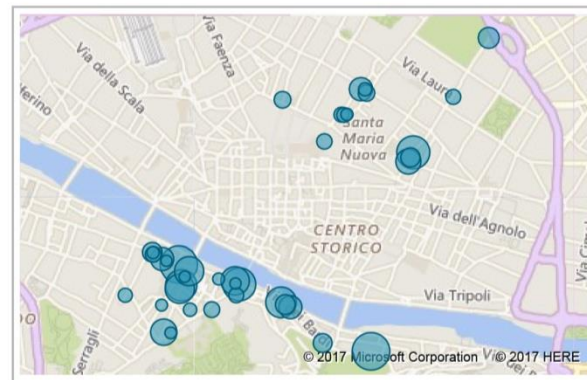
Estimation of the impact on intangible cultural heritage (colour, aesthetic-perceptive valences).  
 Different levels of visual alteration derived from surfaces colour analysis.



# GUIDELINES FOR THE PERFORMANCE OF OPERATIONS FOR PREVENTION, MAINTENANCE AND CONSERVATION

## RECOVERABILITY:

Feasibility degree of conservation intervention in relation to surfaces deterioration patterns. High recoverability means a smaller amount of resources for the restoration.



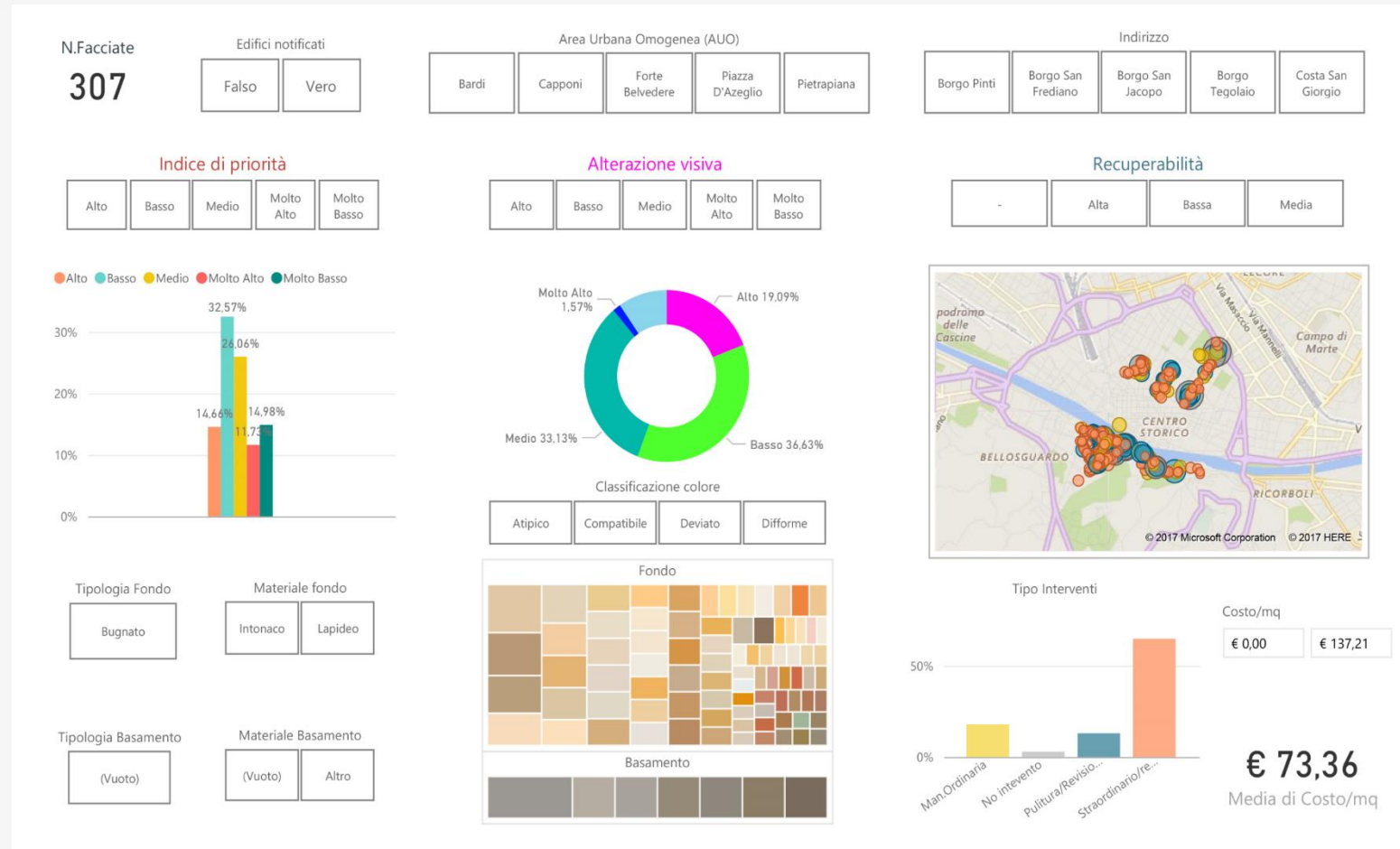


# GUIDELINES FOR THE PERFORMANCE OF OPERATIONS FOR PREVENTION, MAINTENANCE AND CONSERVATION

For every level of impact there are different typologies of intervention.

## CONSERVATION INTERVENTIONS COSTS:

Indices of priority, recoverability and visual alteration determine costs to mq/façade.





UNIVERSITÀ  
DEGLI STUDI  
FIRENZE

**DIDA**  
DIPARTIMENTO  
DI ARCHITETTURA



FIRENZE  
PATRIMONIO  
MONDIALE

# Progetto HECO (Heritage Colors)

*Metodologie Analisi Sintesi Apparati  
Valutazione d'impatto sul sito UNESCO  
Centro Storico di Firenze*

*a cura di*

GIUSEPPE ALBERTO CENTAURO

CARLO FRANCINI

**Progetto HECO: cronologia ed anagrafica del progetto**

Giuseppe Alberto Centauro

**Firenze Patrimonio Mondiale. Monitoraggio e strategie per la del Centro Storico. Il progetto Heritage Colors (HECO) e la valutazione di impatto sul patrimonio (HIA)**

Carlo Francini

## Metodologie

**Progetto HECO. La conoscenza, lo studio e il monitoraggio dei beni architettonici per la conservazione integrata del patrimonio**

“Centro Storico di Firenze — Patrimonio Mondiale dell’Umanità”

Giuseppe Alberto Centauro

**La dichiarazione di eccezionale valore universale (OUV)**

Giuseppe Alberto Centauro

**Diagnostica urbana**

Giuseppe Alberto Centauro

**Monitoraggio urbano**

Giuseppe Alberto Centauro, David Fastelli

**Gestione del Patrimonio del costruito storico e Heritage Impact Assessments (HIA). Il Progetto HECO: tutela dell’identità culturale**

del centro storico di Firenze

Irene Centauro, David Fastelli

## Analisi

**Realizzazione di Sistema Integrato di Documentazione e Archiviazione dei prodotti catalogafici e di rilievo del Progetto HECO**

per il Centro Storico di Firenze — Patrimonio Mondiale UNESCO)

Andrea Bacci

**Misure speciali di tutela e fruizione del sito UNESCO**

Centro Storico di Firenze attraverso studi sulla manutenzione

e il restauro delle facciate monumentali e del loro contesto

Daniela Chiesi

**Cartografia tematica su supporto GIS**

Martina Vicini

**Identificazione, analisi critica e tematica dei parametri architettonici, compositivi e materici, per la definizione delle provvidenze conservative necessarie al mantenimento del sito UNESCO Centro Storico di Firenze**

Nadia Cristina Grandin

**Esempio di scheda compilata per il rilievo e l’analisi del colore**

**Gli spazi aperti nel sito UNESCO Centro Storico di Firenze.**

**Luoghi strategici per la gestione, la valorizzazione**

**e il recupero del paesaggio urbano**

Daniela Cinti

**Vulnerabilità morfologica delle facciate**

Maria Teresa Cristofaro

## Sintesi

**Il Progetto HECO nelle procedure HIA. La mitigazione dei fattori d’impatto sul patrimonio costruito del Centro Storico di Firenze**

Giuseppe Alberto Centauro, David Fastelli

## Apparati

**Tabella di sintesi dei dati delle schede con valutazione economica**

**Bibliografia generale**