



# *Informatica (INFO/01)*

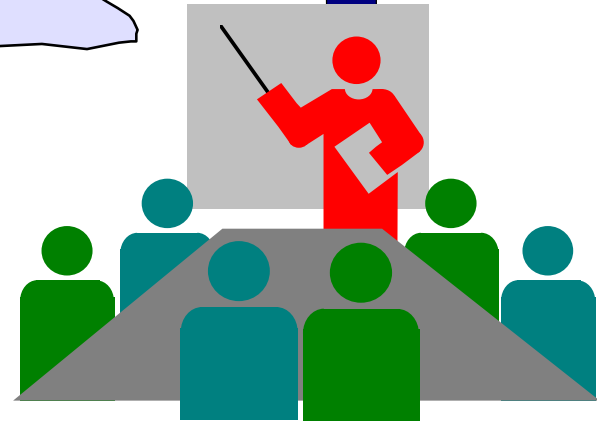
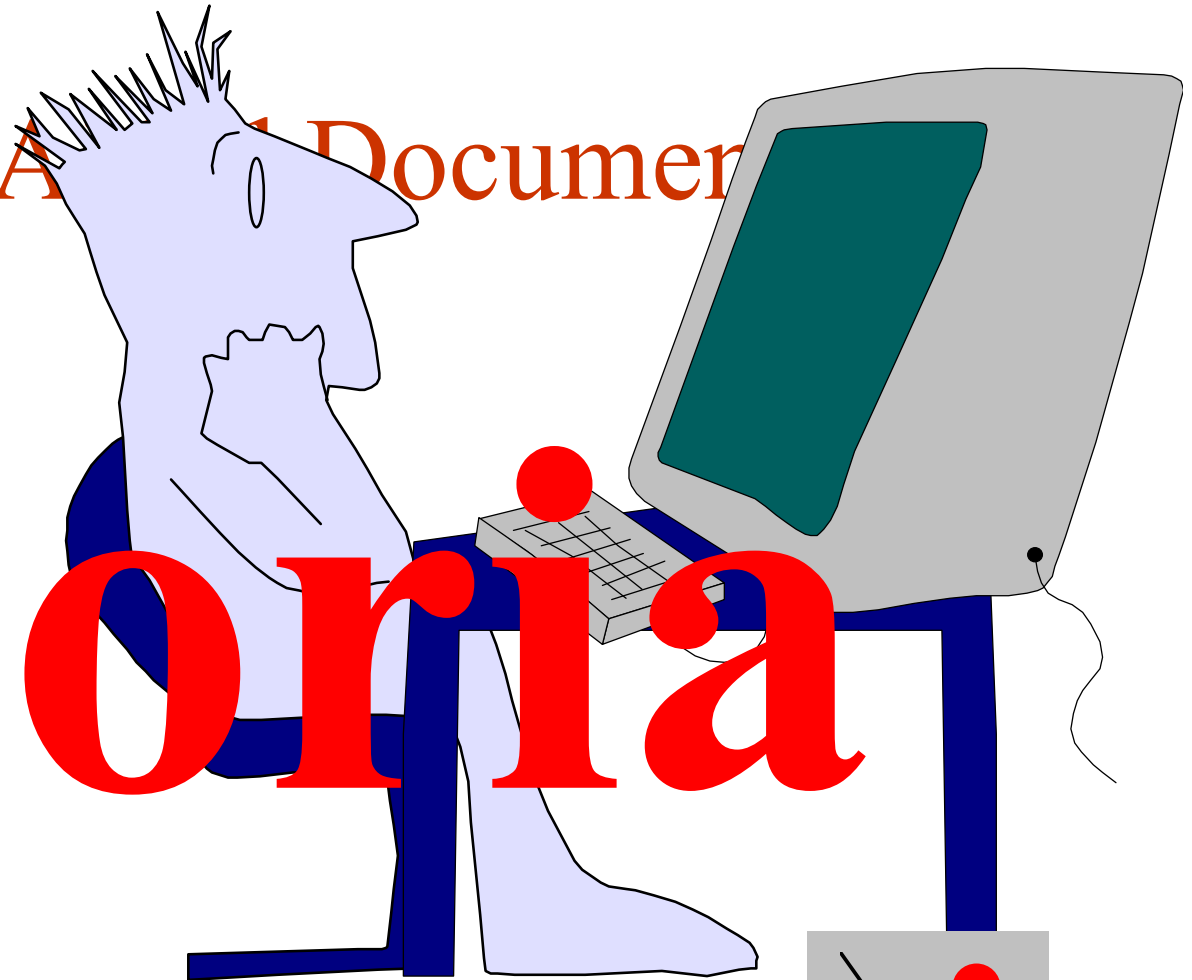
*ABAQ - anno accademico 2018/2019*

*Giancarlo Buzzanca*

MINN. C.A. 467 CIV.  
PLAINTIFFS TRIA  
EXHIBIT

Computer Applications Document

# Teoria





# Cos'è la documentazione ?

La D. è costituita da **tutte** le informazioni, qualsiasi ne sia la caratteristica ed il formato, raccolte durante l'esame e l'intervento sul bene culturale.

L'obiettivo è la registrazione in un **formato stabile** delle informazioni derivate dalle attività di conservazione.

La raccolta delle informazioni potrà essere eseguita ad un **tempo determinato** o potrà essere ripetuta nel tempo.

La fotografia e/o il disegno di rilievo costituiscono il supporto fondamentale per la **visualizzazione** della Documentazione Grafica



# DIZIONARIO DEL RESTAURO E DELLA DIAGNOSTICA



NARDINI EDITORE

Cristina Giannini, Roberta Roani  
con la collaborazione di Giancarlo Lanterna e Marcello Picollo  
Presentazione di Giorgio Bonsanti



## **Documentazione**

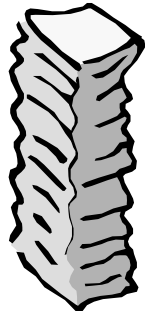
*in relazione ad un intervento di restauro su un manufatto di interesse artistico, la documentazione è costituita dall'insieme dei risultati di ricerche storiche, di analisi scientifiche e di prove tecniche compiute sull'oggetto prima di sottoporlo all'intervento, cui si vanno ad aggiungere la descrizione del metodo di lavoro seguito e delle sostanze impiegate, il materiale fotografico che attesta lo stato del manufatto prima, durante e al termine dell'operazione e una riflessione sul risultato ottenuto sul piano formale e eventualmente funzionale.*

*Queste informazioni, che al termine del lavoro, sono sempre più spesso oggetto di pubblicazioni scientifiche, restano a testimonianza di una fase della storia conservativa di un'opera e del gusto dell'epoca in cui l'intervento è stato eseguito*



Giancarlo Buzzanca

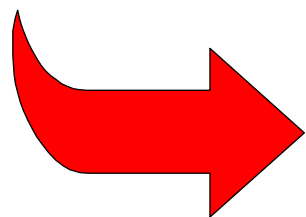




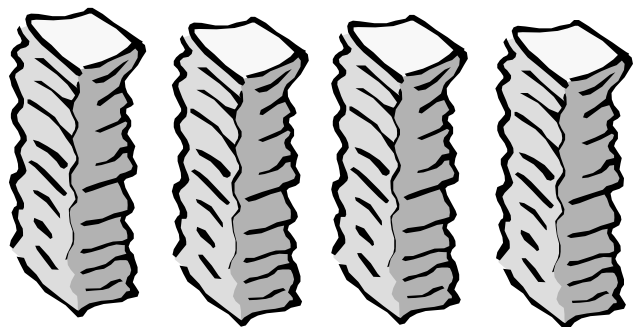
# Documentazione e/o

# Documentazione Grafica ?

Documentazione grafica ai fini  
del restauro di manufatti di  
interesse storico-artistico  
eseguita mediante *elaboratori*.



Valutazione delle potenzialità di  
utilizzo del computer in ausilio alla  
progettazione, alla realizzazione ed alla  
documentazione di un intervento di  
restauro



Giancarlo Buzzanca

# Cos'è la documentazione

## Carte, Documenti, Codici

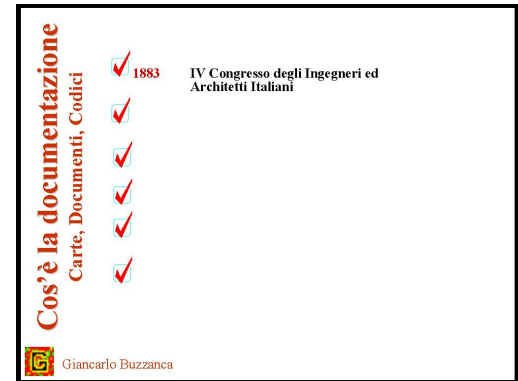
- 1883** **IV Congresso degli Ingegneri ed Architetti Italiani**
- anni '30** **la situazione italiana: archiviazione, catalogazione, documentazione**
- 1964** **Venice Charter**
- anni '90** **Professional Guidelines. Codes of ethics**
- 1996** **Principles for the recording of monuments, groups of buildings and sites (ICOMOS)**
- 1999** **Iccrom Graphic Documentation Framework Document (Gra.Doc)**
- 2003** **RecordIM  
Recording, Documentation, and Information Management Initiative (2003–2007)**



# Cos'è la documentazione?

IV Congresso Ingegneri Architetti Italiani,  
(1883)

- Art. 6 :
  - *Dovranno eseguirsi, innanzi di por mano ad opere anche piccole di riparazione o di restauro, le fotografie del monumento, poi (...) le fotografie dei principali stati del lavoro, e finalmente le fotografie del lavoro compiuto.*
  - *Questa serie di fotografie sarà trasmessa al Ministero della Pubblica Istruzione insieme coi disegni delle piante degli alzati e dei dettagli (...) ove figurino (...) tutte le opere conservate, consolidate, rifatte, rinnovate, modificate, rimosse o distrutte.*
- C. Boito, *Relazione finale*,  
Roma, 1883







### *The Athens Charter for the Restoration of Historic Monuments.*

(...)

- The Conference expresses the wish that:
  - Each country, or the institutions created or recognised competent for this purpose, publish an inventory of ancient monuments, with photographs and explanatory notes;*
  - Each country constitute official records which shall contain all documents relating to its historic monuments;*
  - Each country deposit copies of its publications on artistic and historic monuments with the International Museums Office;*
  - The Office devote a portion of its publications to articles on the general processes and methods employed in the preservation of historic monuments;*
  - The Office study the best means of utilising the information so centralised.*



# Cos'è la documentazione

## Carte, Documenti, Codici



**anni '30**

**la situazione italiana: archiviazione, catalogazione, documentazione**



1932

Carta Italiana del Restauro



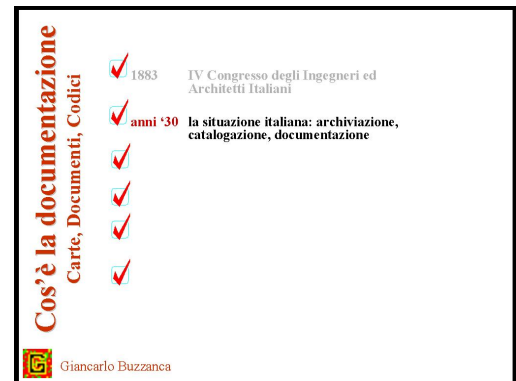
1938

Istruzioni per il Restauro dei Monumenti



1939

Istituto Centrale del Restauro (Argan - Brandi)



**Cos'è la documentazione**  
Carte, Documenti, Codici

1883 IV Congresso degli Ingegneri ed Architetti Italiani

**anni '30** la situazione italiana: archiviazione, catalogazione, documentazione

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### *Norme per il restauro dei monumenti.*

- [ il Consiglio Superiore per le Antichità e Belle Arti afferma che ... ]
- *11 che come nello scavo, così nel restauro dei monumenti sia condizione essenziale e tassativa, che una documentazione precisa accompagni i lavori mediante relazioni analitiche raccolte in un giornale del restauro e illustrate da disegni e da fotografie, sicchè tutti gli elementi determinati nella struttura e nella forma del monumento, tutte le fasi delle opere di ricomposizione, di liberazione, di completamento, risultino acquisite in modo permanente e sicuro.*





 *Istuzioni per il restauro dei monumenti.*  
(...)

• 9.

– *Di tutti i restauri dovrà essere curata un'esauriente documentazione grafica e fotografica, accompagnata da una relazione sui procedimenti tecnici seguiti, sugli elementi storici eventualmente venuti in luce, sui risultati finali dei lavoro.*

– *Tali documentazioni, siano esse relative a monumenti o a opere d'arte, verranno conservate nell'Archivio Centrale del Restauro, presso l'Istituto Centrale del Restauro in Roma.*



# Istituto Centrale per il Restauro

## *Principi e obiettivi*



Fondato nel 1939 da  
G..C.Argan and C.Brandi

### *Principi*

- rispetto delle tracce lasciate dal tempo sulle opere d'arte
- intervento sui materiali costitutivi
- riconoscibilità e reversibilità dell'intervento conservativo
- il restauro è una azione critica

### *Obiettivi*

- eseguire direttamente restauri di particolare complessità tecnica e metodologica
- svolgere indagini scientifiche sulle tecniche e sui materiali antichi e sulle cause di deperimento delle opere d'arte
- fornire assistenza tecnica
- funzionare come scuola di perfezionamento per i restauratori



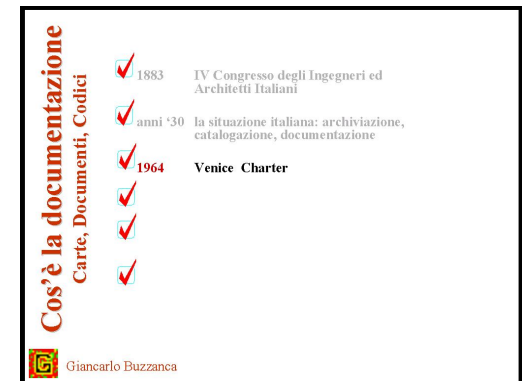
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### *Article 16.*

*In all works of preservation, restoration or excavation, there should always be precise **documentation** in the form of analytical and critical reports, illustrated with drawings and photographs.*

*Every stage of the work of clearing, consolidation, rearrangement and integration, as well as technical and formal features identified during the course of the work, should be included.*

*This record should be placed in the archives of a public institution and made available to research workers. It is recommended that the report should be published*





# Cos'è la documentazione

## Carte, Documenti, Codici



**anni '90**

### **Professional Guidelines. Codes of ethics**



**1993**

**E.C.C.O. Professional Guidelines**



**1994**

**ARI Codice deontologico del conservatore restauratore**



**1995**

**Dutch association of professional restorers. Code of Ethics**



**1996**

**The American Institute for Conservation of Historic and Artistic Works . Code of Ethics**

**Cos'è la documentazione**

Carte, Documenti, Codici



1883

IV Congresso degli Ingegneri ed Architetti Italiani



anni '30

la situazione italiana: archiviazione, catalogazione, documentazione



1964

Venice Charter



anni '90

Professional Guidelines. Codes of ethics



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### *Article 10.*

*Documentation of a cultural property should include records of the diagnostic examination, conservation and restoration interventions and other relevant information. This documentation becomes part of the cultural property and must be available for appropriate access.*



# Cos'è la documentazione

Associazione restauratori d'italia

CODICE DEONTOLOGICO (1994)

- *Art. 9*
- *Il conservatore-restauratore ha l'obbligo di documentare il proprio operato sul bene con particolare riferimento agli elementi che ne caratterizzano la conservazione*
  
- *Art. 20*
- *Al termine di ogni intervento il conservatore-restauratore redigerà una relazione descrittiva sulla natura dei trattamenti eseguiti, con specifico riferimento alle sostanze usate. Tale relazione, insieme al resoconto dell'esame preliminare, le testimonianze fotografiche e i rapporti scientifici delle analisi e gli eventuali campioni prelevati vanno a costituire la documentazione del bene culturale divenendone corredo storico ed analitico integrante*





- *2.7 Reporting*
- *The restorer must document his activities and the materials used in order to be able to consult the documentation in the future. (...) The treatment report should contain the following matters:*

*1. A description of the manner of treatment with precise details of the materials and methods used (...)*

*2. Photographic documentation, with accompanying text, of:*

- a) the condition of the object before treatment;*
- b) the condition of the object during treatment (...);*
- c) condition after treatment (...)*



# Cos'è la documentazione

The American Institute for Conservation  
of Historic and Artistic Works - AIC

*All the records, written and pictorial, accumulated during the examination and treatment of an **object**; where applicable, documentation includes*

- *the examination record,*
- *treatment proposal,*
- *owner consent,*
- *the treatment record and summary, and*
- *the recommendation for future use, storage and exhibition.*



The International Institute for Conservation of Historic and Artistic Works -  
Canadian Group

- *All the records, written and pictorial, accumulated during the examination and treatment of a **cultural property**; where applicable, documentation includes the examination records and report, and the recommendation for subsequent care*

The American Institute for Conservation of Historic and Artistic Works - AIC

- *All the records, written and pictorial, accumulated during the examination and treatment of an **object**; where applicable, documentation includes the examination record, treatment proposal, owner consent, the treatment record and summary, and the recommendation for future use, storage and exhibition.*

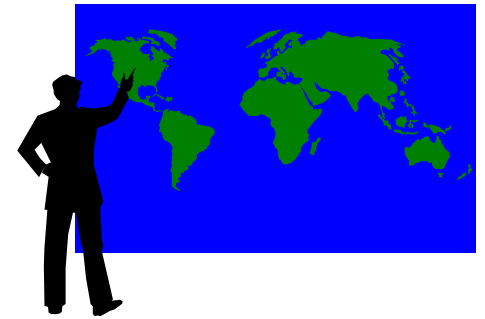


Computer Aided Document



**Come l'AIC  
definisce la  
Documentazione**

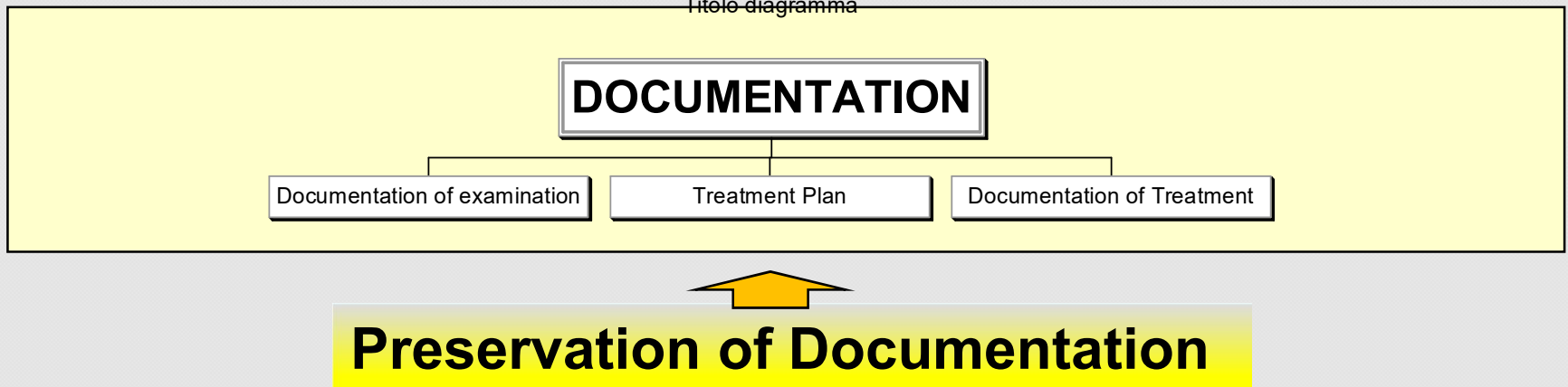
# Documentation



## American Institute for Conservation *Code of Ethics & Guidelines for practice*

March 1996

Titolo diagramma



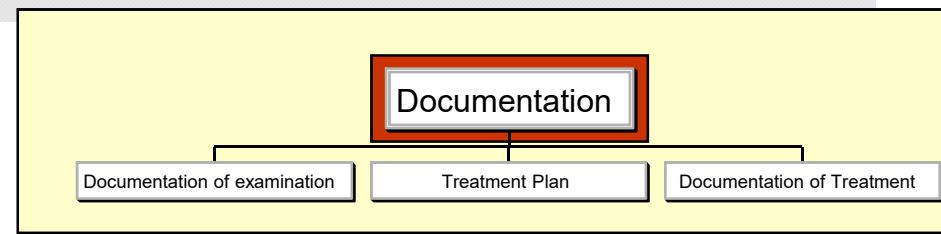




24

*The conservation professional has an obligation to produce and maintain accurate, complete, and permanent records of examination, sampling, scientific investigation, and treatment. When appropriate, the records should be both written and pictorial.*

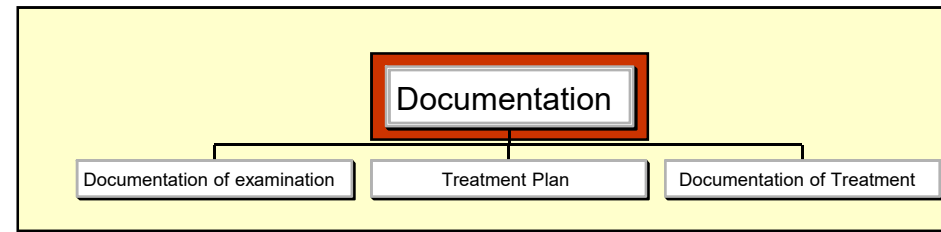
*The kind and extent of documentation may vary according to the circumstances, the nature of the object, or whether an individual object or a collection is to be documented.*





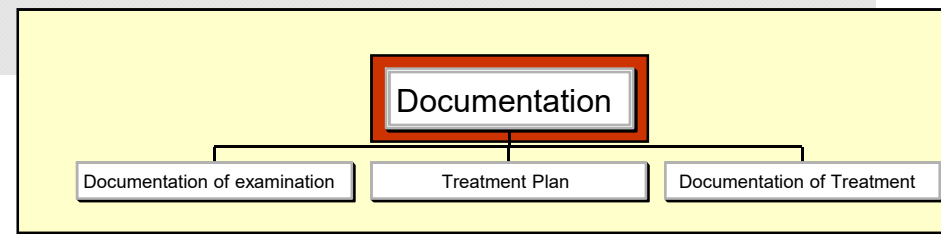
*Il professionista che si occupa di conservazione ha l'obbligo di produrre e aggiornare una registrazione accurata, completa e stabile dell'esame a vista, delle indagini scientifiche e dei trattamenti conservativi*

*Quando opportuno la registrazione potrà essere sia scritta sia visiva. (...)*





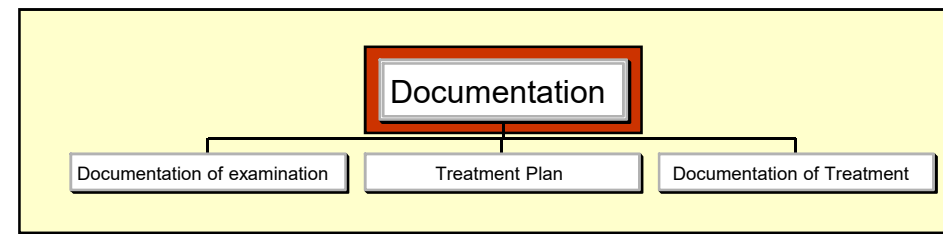
- 24** (...) *The purposes of such documentation are:*
- *to establish the condition of cultural property;*
  - *to aid in the care of cultural property by providing information helpful to future treatment and by adding to the profession's body of knowledge;*
  - *to aid the owner, custodian, or authorized agent and society as a whole in the appreciation and use of cultural property by increasing understanding of an object's aesthetic, conceptual, and physical characteristics; and*
  - *to aid the conservation professional by providing a reference that can assist in the continued development of knowledge and by supplying records that can help avoid misunderstanding and unnecessary litigation.*





*Gli scopi di tale documentazione sono:*

- *descrivere le condizioni del bene culturale;*
- *contribuire alla conservazione del bene culturale fornendo informazioni utili ai trattamenti futuri e accrescendo le conoscenze professionali;*
- *aiutare i proprietari, i custodi e i gestori dei beni culturali (...) accrescendone la conoscenza dei valori estetici e concettuali e delle caratteristiche fisiche del manufatto bene culturale;*
- *migliorare il conservatore nella sua professione mediante esperienze che possono contribuire al continuo sviluppo della conoscenza (...).*



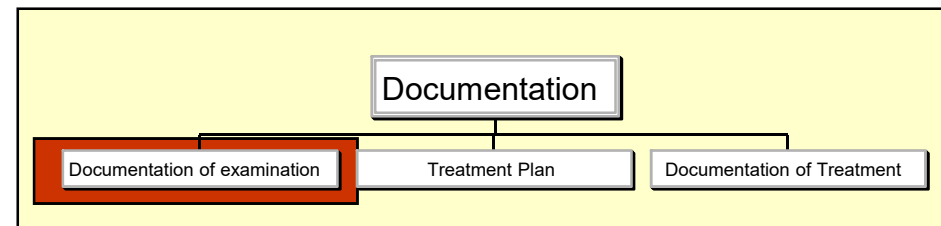


## 25

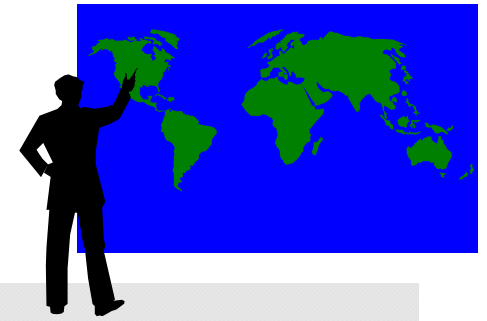
*Before any intervention, the conservation professional should make a thorough examination of the cultural property and create appropriate records.*

*These records and the reports derived from them must identify the cultural property and include the date of examination and the name of the examiner.*

*They also should include, as appropriate, a description of structure, materials, condition, and pertinent history*





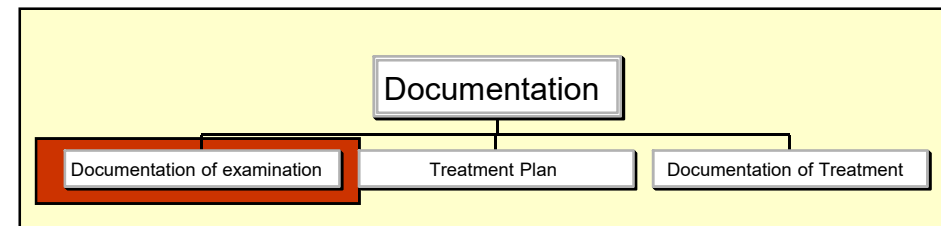


25

*Prima di ogni intervento il Conservatore deve compiere un approfondito esame del bene culturale e compiere le necessarie trascrizioni delle proprie osservazioni.*

*Queste registrazioni, come le relazioni e ogni documento che ne derivi debbono identificare il bene culturale cui si riferiscono e includere data e nome dell'esaminatore.*

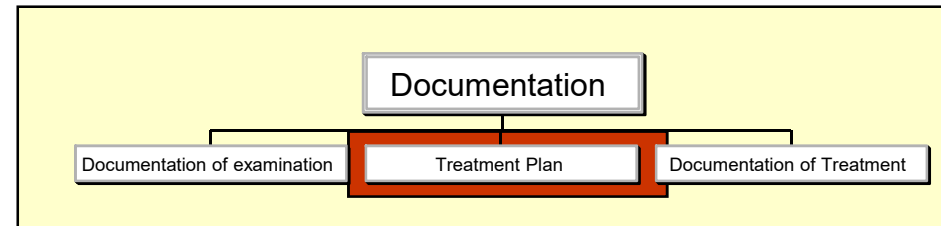
*Questi dovranno includere, quando opportuno, una descrizione delle strutture, dei materiali e delle sue condizioni di conservazione*



# Treatment Plan



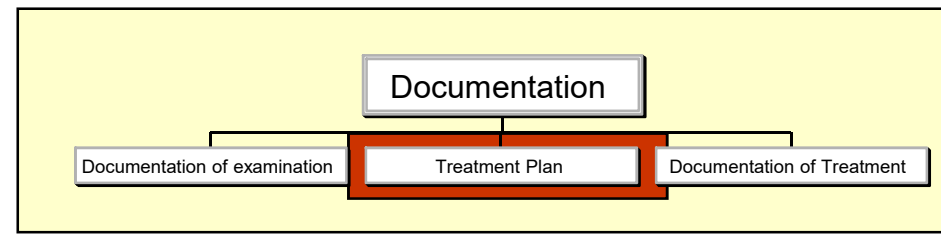
**26** *Following examination and before treatment, the conservation professional should prepare a plan describing the course of treatment. This plan should also include the justification for and the objectives of treatment, alternative approaches, if feasible, and the potential risks. When appropriate, this plan should be submitted as a proposal to the owner, custodian, or authorized agent..*

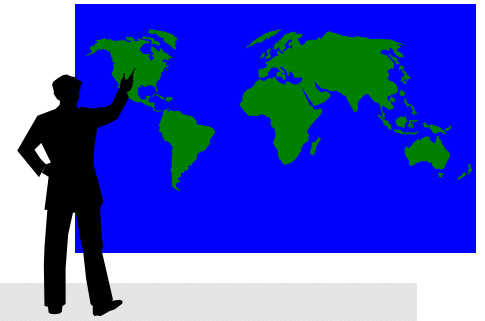




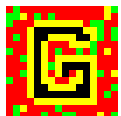
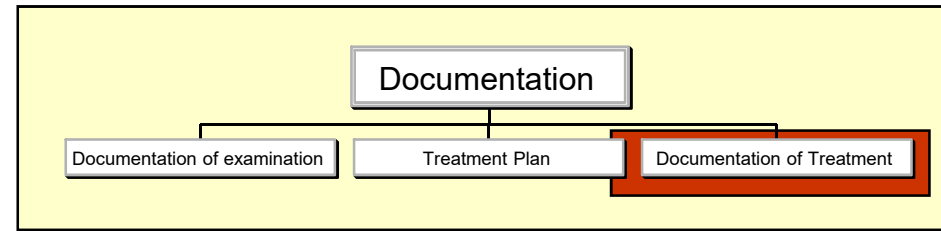
**26** *Successivamente all'esame e prima del trattamento il Conservatore dovrà preparare un piano che descriva lo svolgimento del trattamento.*

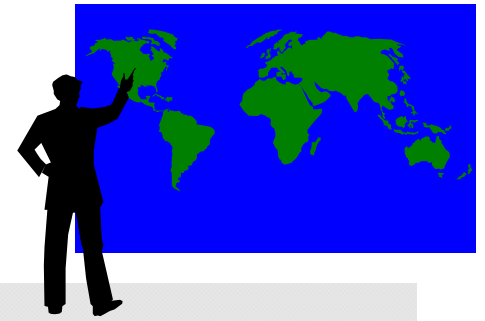
*Questo piano dovrebbe anche includere la giustificazione e gli obiettivi del trattamento, gli eventuali approcci alternativi ed i rischi potenziali. (...)*





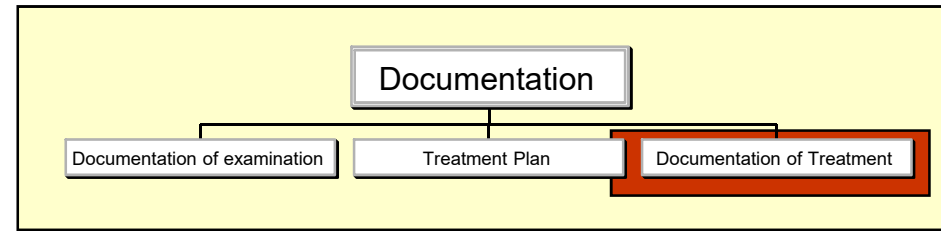
*27 During treatment, the conservation professional should maintain dated documentation that includes a record or description of techniques or procedures involved, materials used and their composition, the nature and extent of all alterations, and any additional information revealed or otherwise ascertained. A report prepared from these records should summarize this information and provide, as necessary, recommendations for subsequent care*

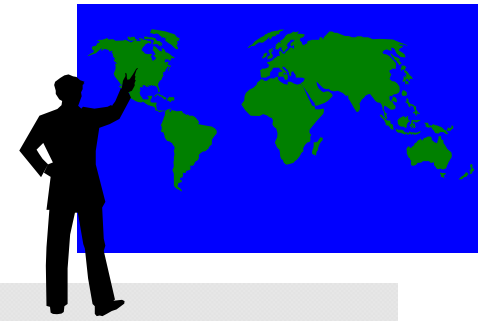




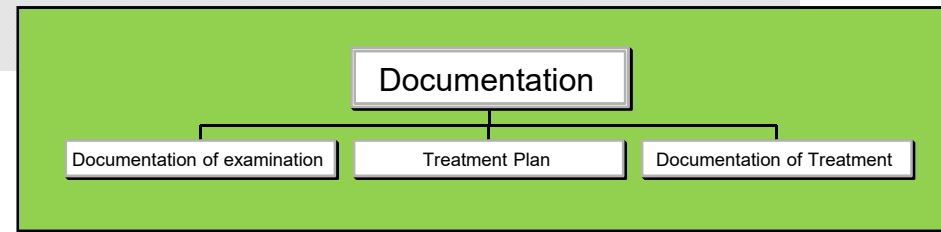
**27** *Nel corso del trattamento il Conservatore dovrà curare una documentazione aggiornata che includa la registrazione delle tecniche e delle procedure utilizzate, i materiali usati e la loro composizione, la natura e l'estensione di ogni alterazione ed ogni informazione addizionale rintracciata o accertata.*

*Una relazione finale completa di tutte queste informazioni conterrà le raccomandazioni per la gestione del bene.*



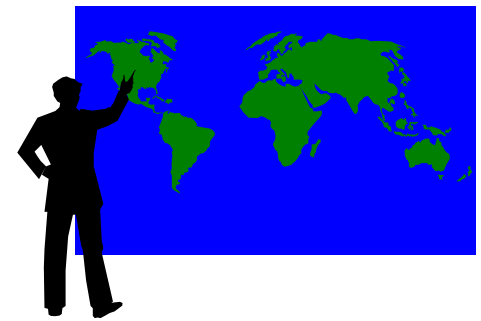


**28** *Documentation is an invaluable part of the history of cultural property and should be produced and maintained in as permanent a manner as practicable. Copies of reports of examination and treatment must be given to the owner, custodian, or authorized agent, who should be advised of the importance of maintaining these materials with the cultural property. Documentation is also an important part of the profession's body of knowledge. The conservation professional should strive to preserve these records and give other professionals appropriate access to them, when access does not contravene agreements regarding confidentiality*





# Documentation

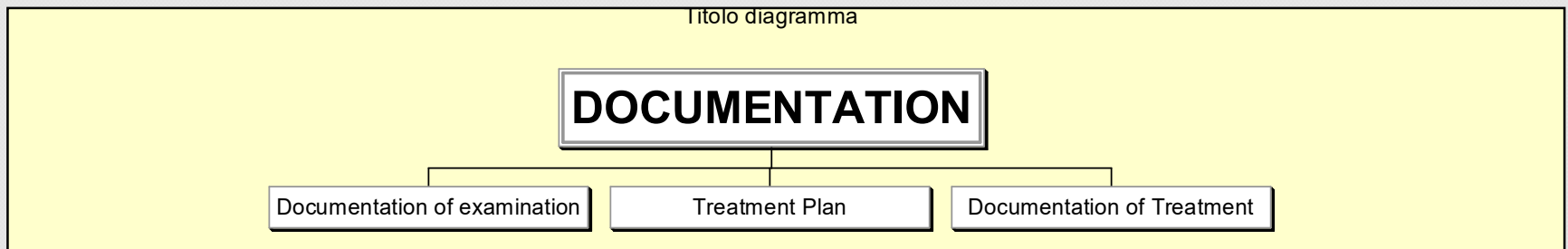


## Commentaries to the guidelines for practice

### American Institute for Conservation of historic & artistic works

Approved by the AIC Board of Directors, May 2001

Revised and approved by the AIC Board of Directors, September 2008



**Preservation of Documentation**

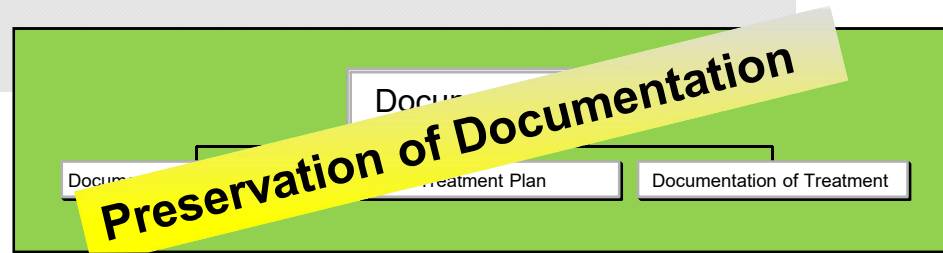


# 28 - Preservation of documentation



- *RATIONALE*
- *MINIMUM ACCEPTED PRACTICE*
- *RECOMMENDED PRACTICE*
- *SPECIAL PRACTICES*

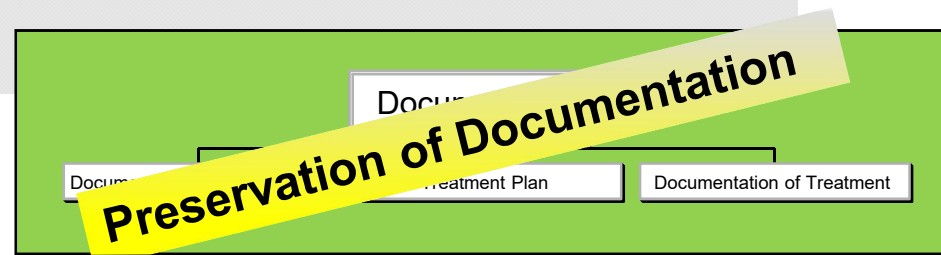
(Approved by the AIC Board September 2008)



# 28 - Preservation of documentation



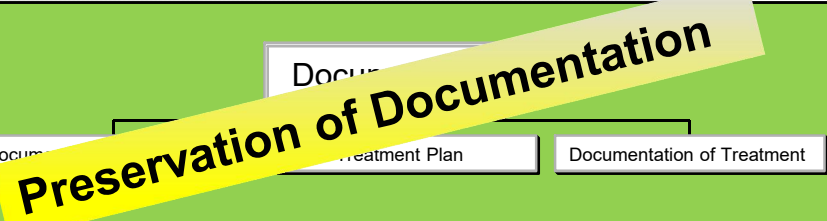
- *RATIONALE (1/4)*
- Documentation is an integral part of the conservation process; therefore, it must be preserved so that the information it contains is later available to conservators and others.
- For a specific cultural property, documentation may be used to:
  - evaluate the cultural property's present condition;
  - plan its further treatment;
  - expand appreciation and understanding of it;
  - study it even if it is lost, destroyed, or otherwise made inaccessible.



# 28 - Preservation of documentation



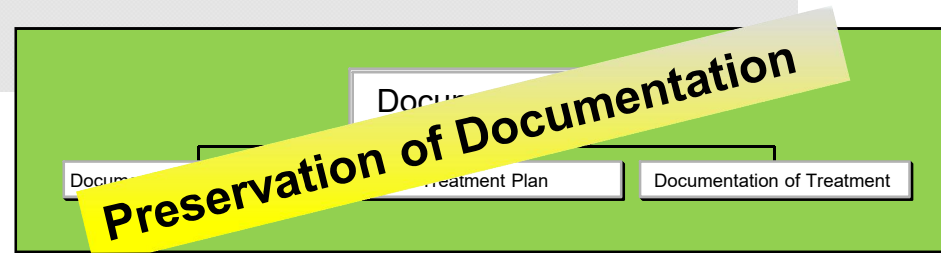
- *RATIONALE (2/4)*
- More generally, the documentation may be used to:
  - evaluate treatment methods and materials;
  - support scholarly research;
  - provide a record of “*current accepted practice*”;
  - study the history of the conservation profession and the thought processes and rationales applied to the care of cultural property.



# 28 - Preservation of documentation



- *RATIONALE (3/4)*
- Documentation:
  - reduces the need for direct intervention (e.g., sampling, handling, re-excavation, pretreatment testing) when future study and treatment are undertaken;
  - serves as an important educational tool for owners/custodians, students, scholars, and the general public;
  - serves as a record that can help avoid misunderstanding and unnecessary litigation;
  - enhances the credibility of the conservation profession by setting a positive example for allied professionals and the public.
  - promotes effective preservation and conservation strategies.



# 28 - Preservation of documentation



- *RATIONALE (4/4)*

- Documentation may be created and preserved in human readable (hard copy) form and/or electronic form. The advantages of each form are:

1. Hard copy documentation

- does not require complex storage measures to maintain for its expected lifespan;
- requires no special equipment to view or access;
- can be physically stored with related object information and supporting materials (e.g., sampled material, labels, handwritten notations).

2. Electronic Documentation:

- provides the most easily accessed documentation record when properly managed and organized;
- can provide the most informative photographic record when electronically displayed, if created properly;
- has the ability to maintain, preserve, and reproduce the photographic documentation without image degradation, given appropriate digital preservation strategies.

**Preservation of Documentation**

Docum

Treatment Plan

Documentation of Treatment



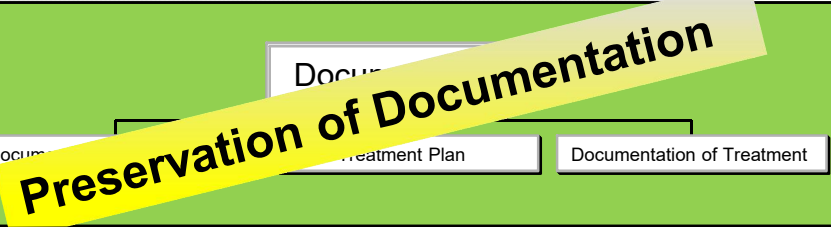


# 28 - Preservation of documentation



- *MINIMUM ACCEPTED PRACTICE (1/5)*

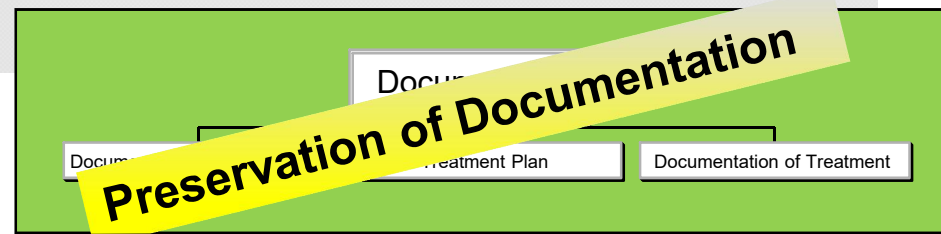
- Handwritten and printed documentation must be produced on and with permanent, stable media, and be legible. If film is used for the graphic component, the most permanent photographic systems reasonably available must be utilized (such as properly stored and labeled color transparency film).



# 28 - Preservation of documentation



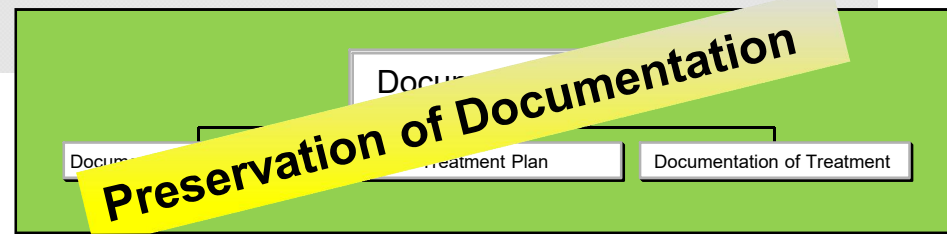
- *MINIMUM ACCEPTED PRACTICE (2/5)*
- If documentation is created using electronic media, the conservation professional must recognize that the long-term maintenance of these records requires regular proactive measures. A comprehensive plan for long-term storage of digital records must be established. Such plans involve (but are not limited to):
  - the creation and maintenance of at least two copies of the electronic records kept in different locations;
  - the regular monitoring of records (i.e., make sure they open correctly);
  - the regular migration of records to new electronic media;
  - the conversion to new file formats when necessary to keep current with changes in technology and thus ensure long-term access to the records.
- The conservation professional must also recognize that, unlike traditional hard copy records, the long-term survival of digital files is at present unproven over time.



# 28 - Preservation of documentation



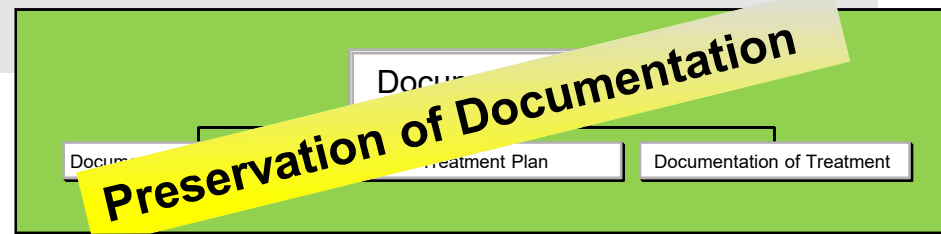
- *MINIMUM ACCEPTED PRACTICE (3/5)*
- If databases or other electronic record keeping systems are used in the course of maintaining image files and other digital documentation, then these supporting electronic records must also be preserved with equal attention to planning and care.
- If such measures for the maintenance of electronic documentation records cannot be achieved, the conservation professional must create and maintain hard copies of the documentation on the most permanent materials available. Recommended storage conditions should be followed for hard copy material.
- Electronic conservation record files, both photographic- and text-based, should be stored in a file format that is as universally accessible as is reasonably possible.



# 28 - Preservation of documentation



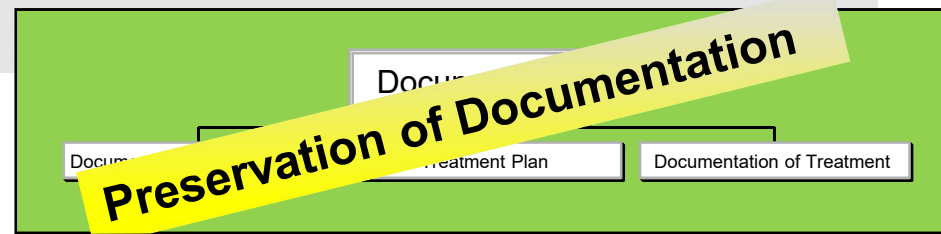
- *MINIMUM ACCEPTED PRACTICE (4/5)*
- Records should be organized and maintained to ensure their preservation and their retrieval in a timely manner, by appropriate individuals. The records must be stored under the best environmental conditions feasible.
- Multiple copies of the documentation must exist: one (the “record copy”) with the owner/custodian (curatorial office or registration department in an institution), the other with the conservation professional. For electronic records, the conservation professional must create and maintain at least two copies on separate storage media in different locations. The conservation professional must stress to the owner/custodian the importance of storing these records properly and maintaining them with the cultural property, even if ownership changes.



# 28 - Preservation of documentation



- *MINIMUM ACCEPTED PRACTICE (5/5)*
- To allow access to the documentation without violating confidentiality, the owner/custodian should be asked to sign a written agreement governing access to the information by conservation and allied professionals and by future owners/custodians. Conservation professionals working in public institutions may not need to obtain such an agreement, since access to documentation created within such institutions is governed by federal and state statutes.
- When requested, copies of documentation should be provided to future owners/custodians or conservation professionals in a timely fashion.

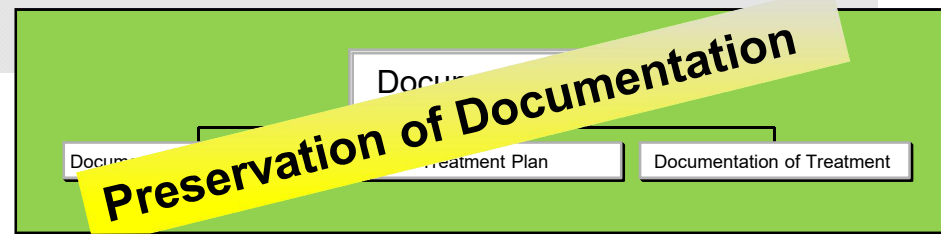




# 28 - Preservation of documentation



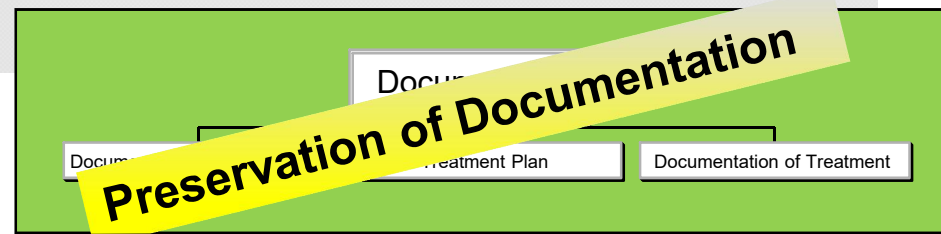
- *RECOMMENDED PRACTICE (1/5)*
- Written and graphic documentation other than photographic should be executed on paper that meets ANSI Standard Z39.48-1992. (R2002) (ISO 9706:1994).
- The conservation professional should retain an original photographic record (e.g., negative, original color transparency, or electronic file) so the highest quality of graphic information is available.
- Both electronic documentation and hard copy of electronic documentation should be created and maintained whenever possible in order to maximize long-term stability and provide widest accessibility.
- Multiple copies of documentation files in electronic form should be maintained and physically stored in multiple locations.



# 28 - Preservation of documentation



- *RECOMMENDED PRACTICE (2/5)*
- Electronically or magnetically recorded documentation and documentation requiring the use of other specialized retrieval apparatus (e.g., videotape or optical disk) can be useful adjuncts to the permanent record but should not be relied upon as permanent records unless a comprehensive plan for long-term management of the digital file(s) or analog medium is in place (see section B above).
- Recommendations should be made to the owner/custodian regarding the maintenance and use of the documentation. Attaching a summary of critical information (e.g., name of conservation professional, identification or job number, treatment summary) to the cultural property may be a useful way to ensure that documentation accompanies the cultural property over time.

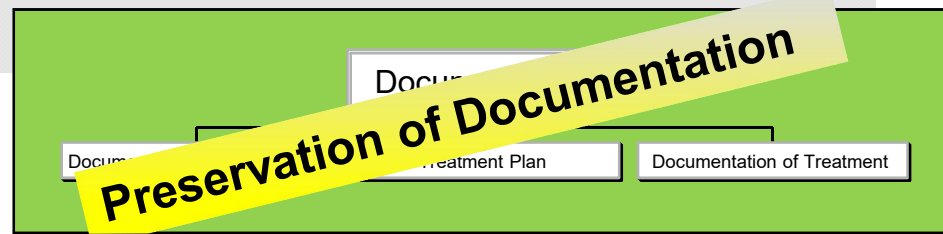




# 28 - Preservation of documentation



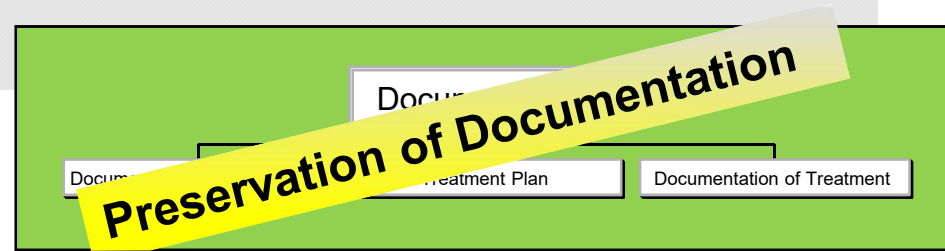
- *RECOMMENDED PRACTICE (4/5)*
- Within institutions, conservation documentation should be regarded as part of the institutional archives, and conservation professionals should work with archivists and records managers to develop sound policies for their permanent retention.
- Private practitioners should maintain and monitor documentation throughout the lifetime of their practice. If ownership of a practice changes hands, the documentation should be included in the transfer. If the practice closes, the conservation professional should make an effort to place documentation in an institutional archives. (AIC provides information on how to identify archives and place collections.)  
If this proves impossible and records must be discarded, their final disposition should be reported to AIC for future reference.



# 28 - Preservation of documentation



- *RECOMMENDED PRACTICE (5/5)*
- The conservation professional should strive to keep informed about and to follow practices for the preservation and organization of records currently recommended by archives professionals.

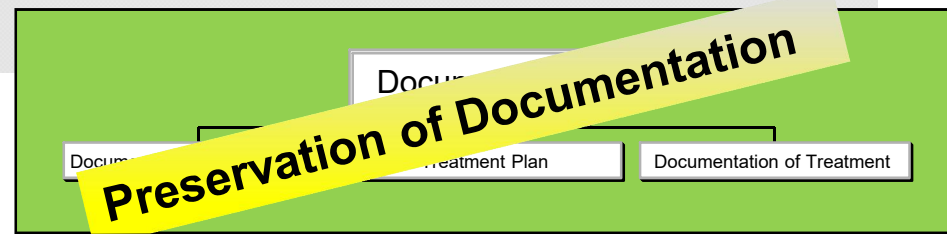


# 28 - Preservation of documentation








- *SPECIAL PRACTICES*

- In certain situations when no substitutes are available, nonpermanent materials (e.g., color Polaroid®, blueprints, or **AutoCAD®**) may be used for documentation. Efforts should be made to transfer the information to a more permanent medium.
- It is advisable to obtain legal and other professional advice when establishing records policies.










### Principles for the recording of monuments, groups of buildings and sites (1996)

Ratified by the 11th ICOMOS General Assembly, in Sofia, Bulgaria, 5 to 9 October 1996

-  *The reason for recording*
-  *Responsability for recording*
-  *Planning for recording*
-  *Content of records*
-  *Management, dissemination and sharing of records*

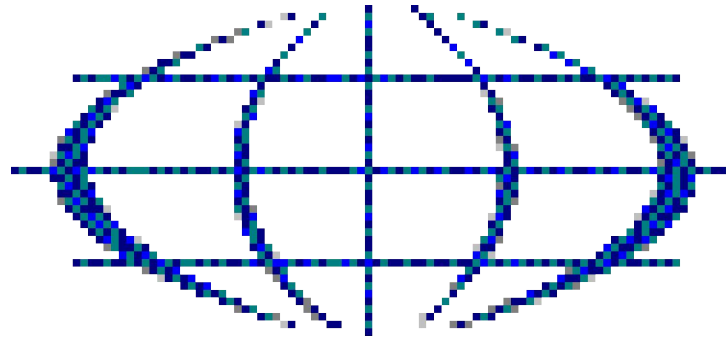
**Cos'è la documentazione**  
Carte, Documenti, Codici

-  1883 IV Congresso degli Ingegneri ed Architetti Italiani
-  anni '30 la situazione italiana: archiviazione, catalogazione, documentazione
-  1964 Venice Charter
-  anni '90 Professional Guidelines. Codes of ethics
-  **1996 Principles for the recording of monuments, groups of buildings and sites (ICOMOS)**
- 

 Giancarlo Buzzanca

# Cos'è la documentazione

Carte, Documenti, Codici




ICCOM



## Graphic Documentation Systems in Mural Painting Conservation

**Cos'è la documentazione**  
Carte, Documenti, Codici

- ✓ 1883 IV Congresso degli Ingegneri ed Architetti Italiani
- ✓ anni '30 la situazione italiana: archiviazione, catalogazione, documentazione
- ✓ 1964 Venice Charter
- ✓ anni '90 Professional Guidelines. Codes of ethics
- ✓ 1996 Principles for the recording of monuments, groups of buildings and sites (ICOMOS)
- ✓ 1999 Icomon Graphic Documentation Framework Document (Gra.Doc)

 Giancarlo Buzzanca



Giancarlo Buzzanca

## Graphic Documentation Systems in Mural Painting Conservation

*Il seminario si prefigge lo scopo di*

- creare una base comune allo scambio produttivo di idee e allo stabilimento di contatti personali tra professionisti con adeguata esperienza in questo campo;*
- definizione dei principi base per la documentazione grafica dei dipinti murali e delle superfici architettoniche in genere;*
- preparare guidelines che specifichino gli scopi ed indichino requisiti minimi e ottimali;*
- valutare le più recenti applicazioni, includendo l'uso di computer-aided systems;*
- promuovere stabili contatti tra specialisti della documentazione e utenti.*



# Graphic Documentation Systems in Mural Painting Conservation Draft Terminology

- **Condition recording:** *to collect and set down for preservation information on the particular state of being or situation of an object with respect to its circumstance at a given time*
- **Conservation documentation:** *the systematic collection, structuring and creation of access to data and document from preliminary investigation, treatment, monitoring and quality control in a multi-temporal, cyclical process*
- **Documentation:** *information units acquired over time through recording and other research means which constitute the knowledge base for particular heritage resources*





# Cos'è la documentazione

## Carte, Documenti, Codici




**RecorDIM**

**Recording, Documentation, and Information  
Management Initiative  
(2003–2007)**

**Cos'è la documentazione**  
Carte, Documenti, Codici

- ✓ 1883 IV Congresso degli Ingegneri ed Architetti Italiani
- ✓ anni '30 la situazione italiana: archiviazione, catalogazione, documentazione
- ✓ 1964 Venice Charter
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- ✓ 1999 Iccrom Graphic Documentation Framework Document (Gra.Doc)

 Giancarlo Buzzanca



Giancarlo Buzzanca

# Cos'è la documentazione

## Carte, Documenti, Codici



- **Project Partners**
  - ICOMOS
  - CIPA Heritage Documentation
  - English Heritage
  - World Monuments Fund
  - Heritage Conservation Directorate of Public Works & Government Services Canada
  - ICCROM
  - India National Trust for Art and Cultural Heritage
  - Université du Québec à Montréal
  - Comité International des Itinéraires Culturels (ICOMOS-ISC)
  - Comité International de Formation (ICOMOS-ISC)
  - Politecnico di Torino
  - University of Pennsylvania
  - World Heritage Center

**Cos'è la documentazione**  
Carte, Documenti, Codici

✓ 1883	IV Congresso degli Ingegneri ed Architetti Italiani
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✓ 1999	Iccrom Graphic Documentation Framework Document (Gra.Doc)

Giancarlo Buzzanca



# Cos'è la documentazione

## Carte, Documenti, Codici




- **Project Team Members**

- **Rand Eppich**, Project Specialist and Project Manager
- **Francois LeBlanc**, Head, Field Projects
- **Nick Swarts**, Project Coordinator
- **Amel Chabbi**, Research Assistant
- **Robin Letellier**, *consultant, recording specialist*
- **Werner Schmid**, *consultant, architectural conservator*

**Cos'è la documentazione**  
Carte, Documenti, Codici

- ✓ 1883 IV Congresso degli Ingegneri ed Architetti Italiani
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 Giancarlo Buzzanca

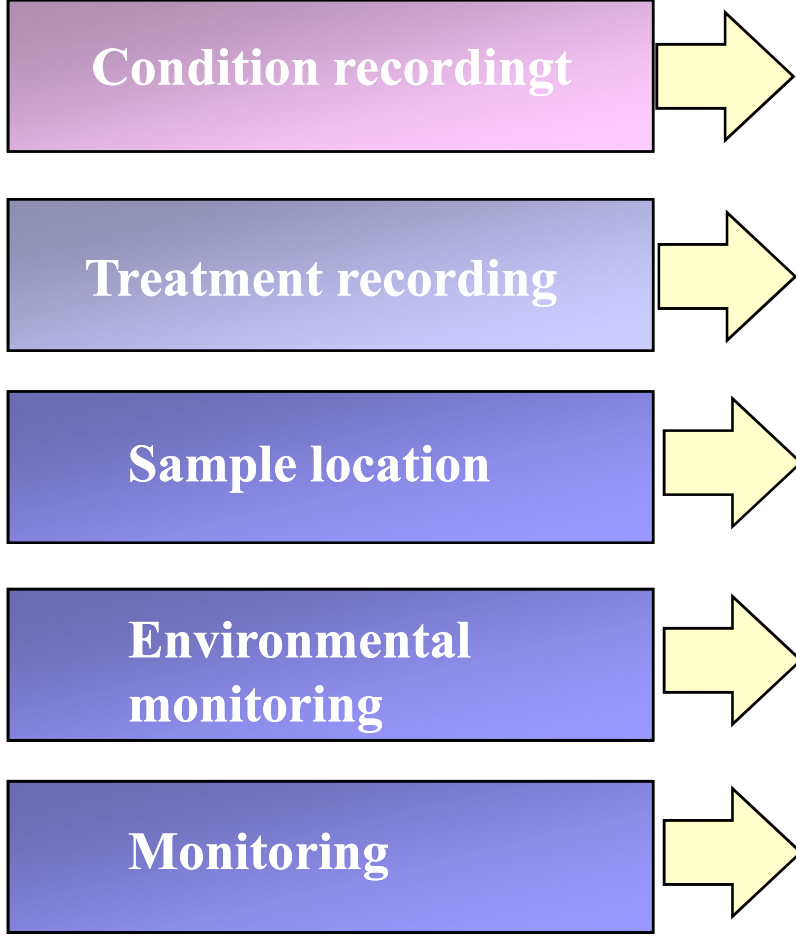


Computer AI Document



Phases,  
components,  
purpose

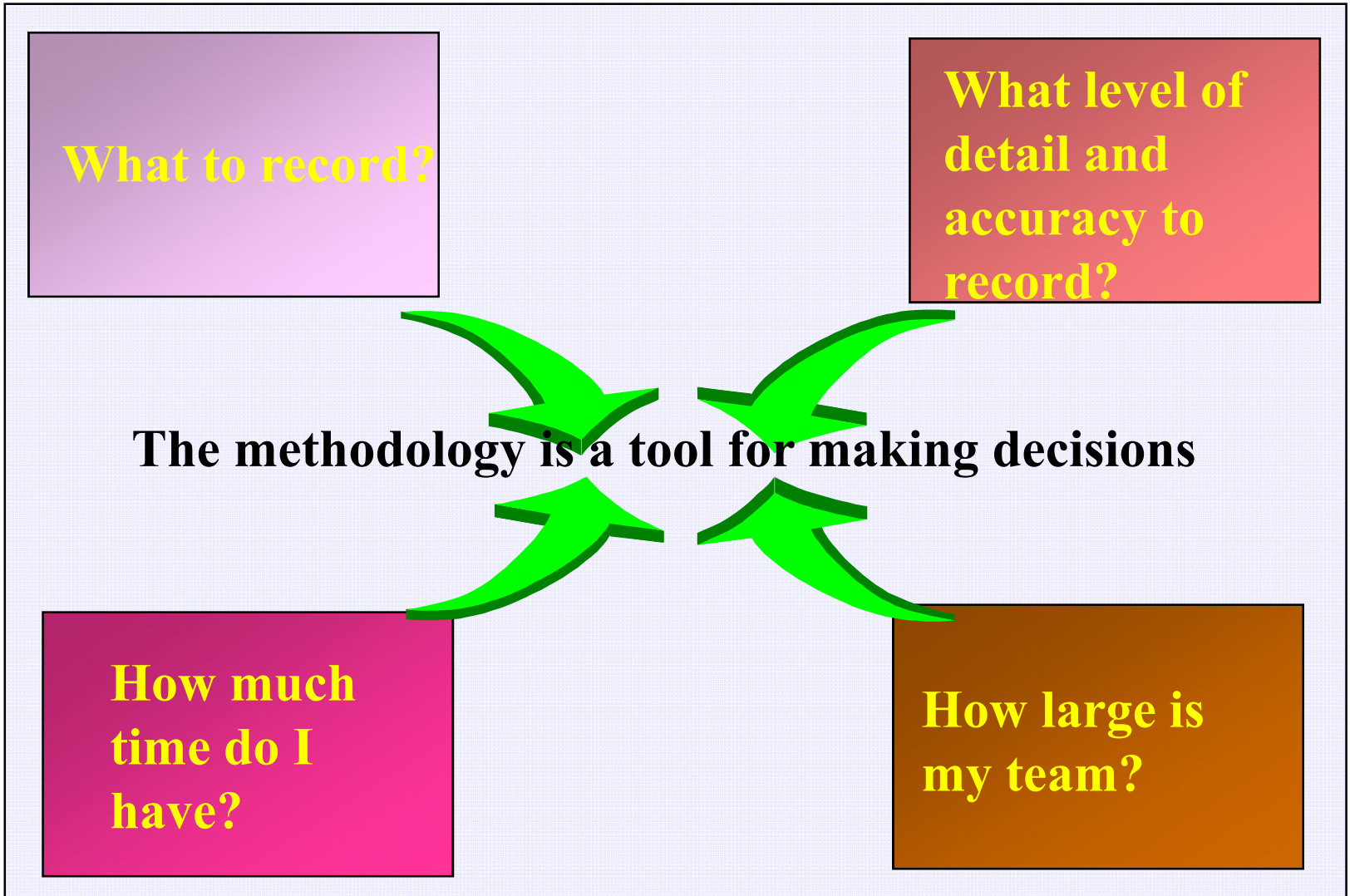
# Type of graphic documentation



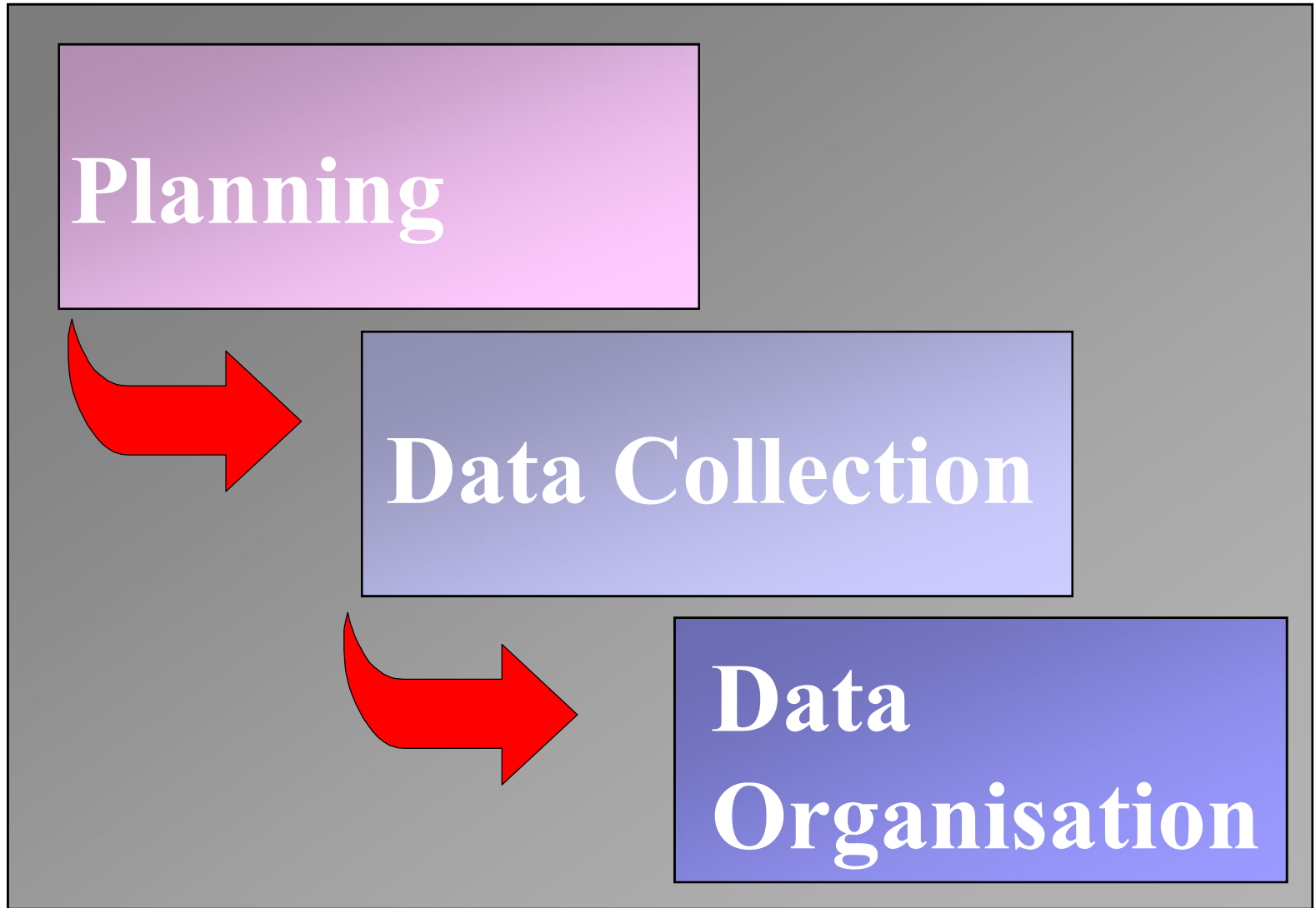
Graphic documentation is used  
to map in spatial  
co-ordinates several  
kind of information



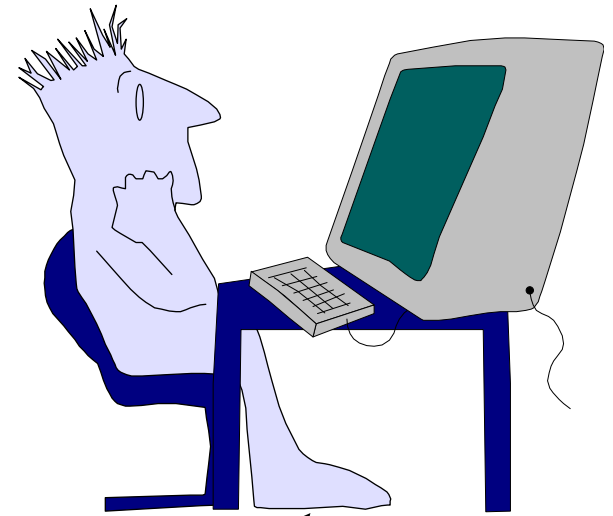
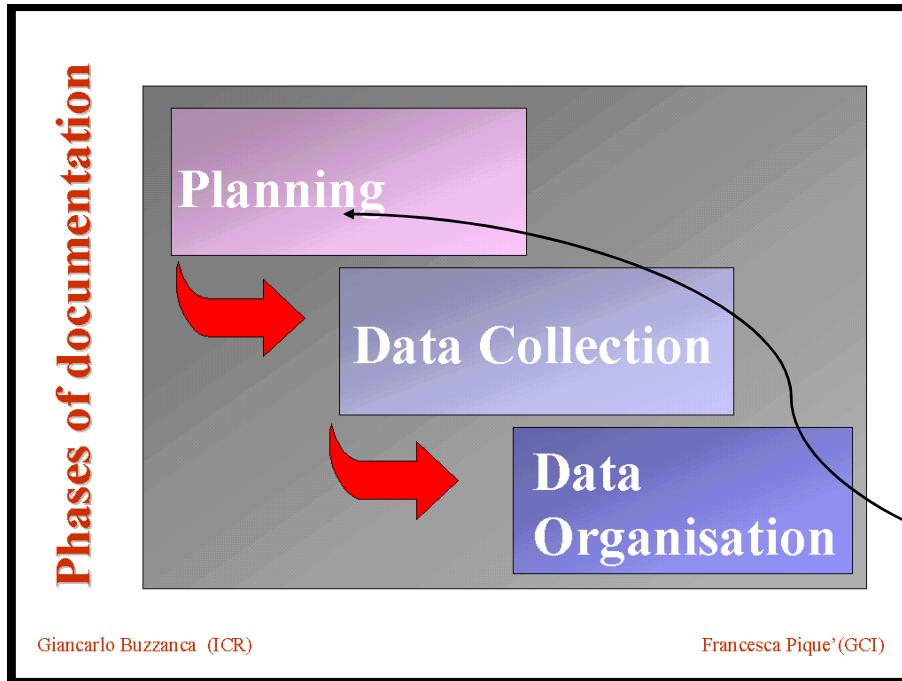
# Role of the methodology



# Phases of documentation

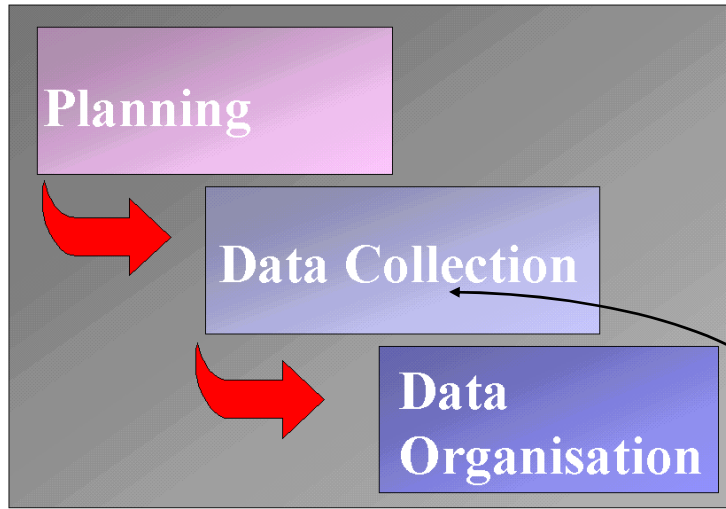






- *Definition of objectives*
- *Definition of the recording method;*
- *Definition and listing of elements to be recorded;*
- *Practical preparation for the field*

**Phases of documentation**



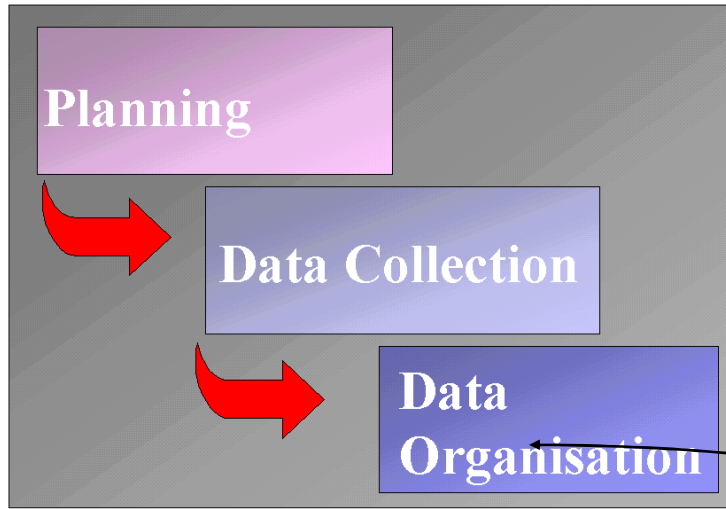
Giancarlo Buzzanca (ICR)

Francesca Piquè (GCI)



- *Graphic recording of elements*
- *Review of legend and visual glossary;*
- *Check of graphic records*

**Phases of documentation**



Giancarlo Buzzanca (ICR)

Francesca Pique' (GCI)



- *Editing of graphic information;*
- *Presentation of graphic information;*
- *Storage of graphic records*

Where?

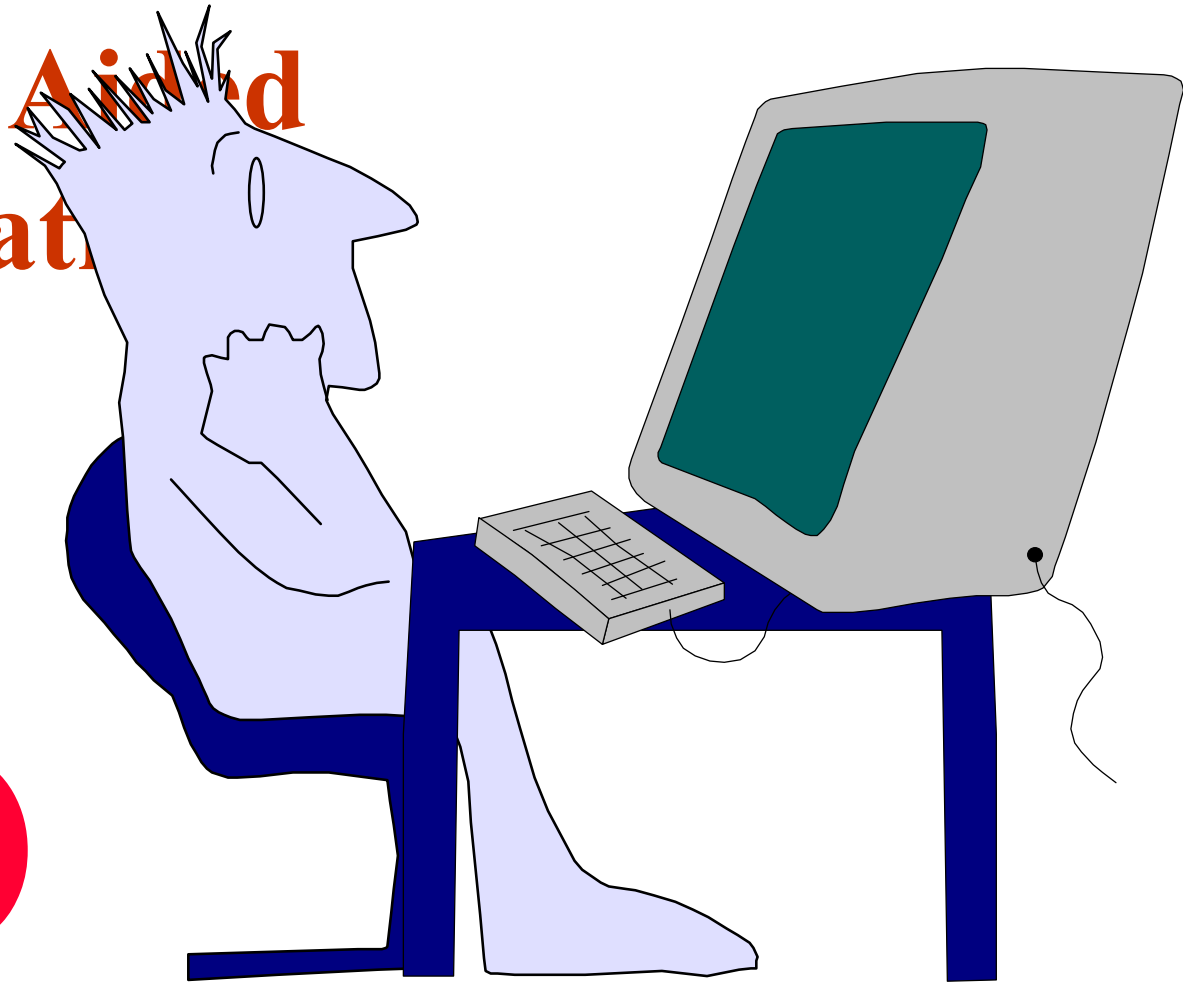
Planning

Data Collection

FIELD  
OFFICE

Data  
Organisation

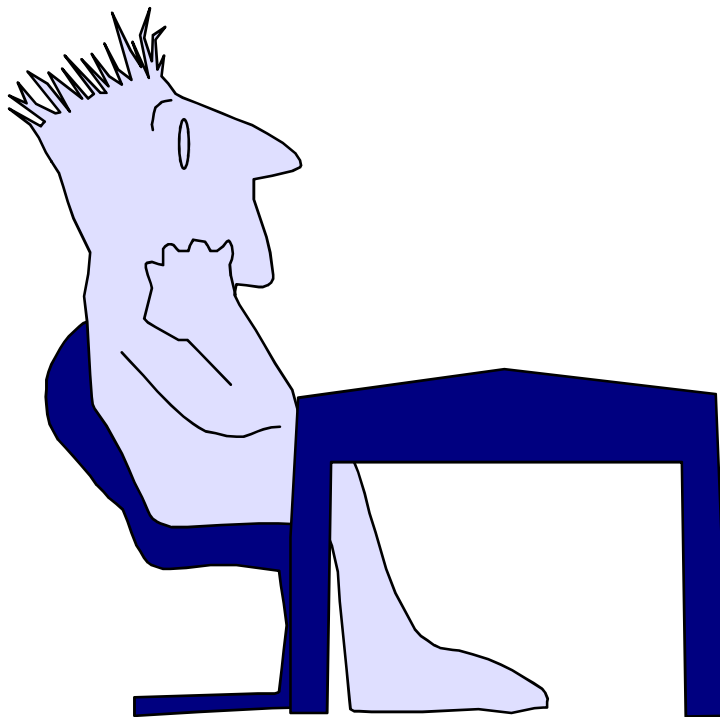
**Computer Aided  
Documentation**



**CAD**

*speedy* **course**

# Computer Aided Documentation



- *Digital Data*
- *Pixel*
- *Vector*
- *CAD*
- *User interface*
- *Wisdom pill*
- *Layers*
- *Standardisation*
- *ISO 13567*
- *Reference files*
- *Raster data*

# Digital Data

Any information in digital format could be called data.

The word digital derives from a latin word *digits*, originally meaning fingers, better understood meaning numbers.

*"Something which can be described with numbers"* is digital.

Digital information can be managed and manipulated with a computer.

The essential basic concepts in digital data management are:

- file: "container" for digital information
- directory: hierarchical "folders" to organize files in any reasonable order.



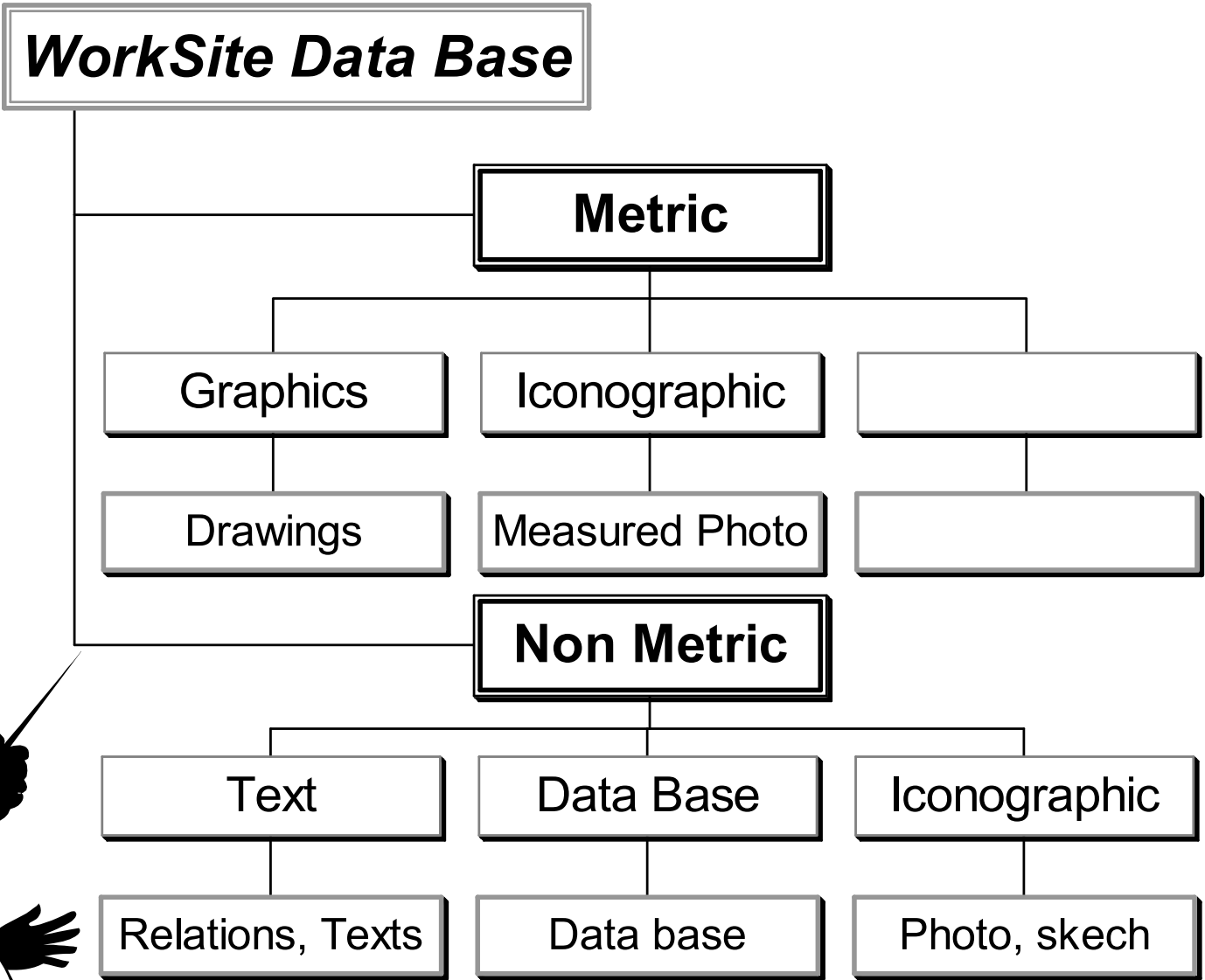
# Digital Data

Computer programs generally are designed to operate with certain type of data.

The most common data formats or types are:

- **alphanumeric information** - data which can be described with letters (a b c A B), numbers (0 1 2 3 ) or special characters (+ - / \* &)
- **graphical information**
  - **vector graphics** - line-based graphics, typically CAD, basic element is a vector ("a line")
  - **raster graphics** - pixel-based graphics, for instance scanned images, basic element is a pixel ("a point"), the basic entity in an image
- **other information** in digital format, for instance music.

# Worksite Data Base



# Vettoriale e Raster

- **Vettoriale:** è un sistema di archiviazione di dati grafici secondo il quale gli oggetti vengono memorizzati in base alle coordinate cartesiane dei punti e linee che li compongono.
- **Raster:** qualsiasi immagine può essere pensata come formata da un insieme di piccole aree uguali (pixel, ordinate secondo linee e colonne, tali da costituire una matrice. I valori associati ad ogni cella possono esprimere sia informazioni di tipo grafico (colore, tono di grigio, ecc) sia di tipo descrittivo (temperatura, pendenza, ecc).



# Integrazione Vettori/Raster

- interfaccia utente studiata per rendere intuitivo l'uso integrato dei due formati
- strutture omogenee di archivi di dati raster e vettoriali
- gestione dei dati descrittivi associati alle due tipologie di formato
- compatibilità del sistema di geo-referenziazione dei due formati
- possibilità di visualizzare ed interrogare simultaneamente e contemporaneamente dati raster e vettoriali
- tecniche di elaborazione integrata
- facilità nel passaggio dei dati dal formato vettoriale al formato raster e viceversa.

Customers convert data from raster to vector to enhance its value (...) raster and vector are but two form of data on a continuum of low-value to high-value (...)

... here are three ways you can handle the **raster** data, depending on the value you need from it:

- **archive,**
- **background,**
- **convert** converting data from a form that is not very computer usable to one that is.
  - **manual editing (do nothing)**
  - **redrawing IN AutoCAD**
  - **tracing with a digitizer**
  - **scanning**

Grabowski, R., Getting digital, in Cadence, vol 12, n°11



# Pixel vs Vector

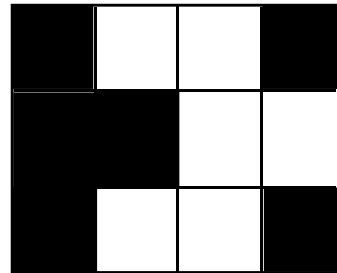
Pixel stands for picture element. A pixel is the most basic component of any computer graphic. It corresponds to the smallest thing that can be drawn on a computer screen.

Every computer graphic is made up of a grid of pixels.

This grid of pixels is called a bitmap.

In black & white, each pixel can be represented by 1 bit, a 1 if the pixel is black, or a 0 if the pixel is white.

<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>
<i>1</i>	<i>1</i>	<i>0</i>	<i>0</i>
<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>



Sometimes you need more than 1 bit per pixel.

This depends on the bit depth of an image.

Vector: A digital element encoded as formulas that represent lines and curves

# *CAD* Computer Aided Design

CAD is currently wide abbreviation covering generally "designers digital toolbox", computer-based tools used in engineering.

- **CAD-system** covers the whole structure including a workstation (hardware) and software
- **CAD-workstation** includes all hardware components needed to make an application work
- **CAD-application** is a [mainly graphical] software package developed to a certain application area.

The drawings will be:

- **2D-CAD** means drawing with a CAD-system (the end product is a CAD-drawing)
- **3D-CAD** means 3-dimensional geometric modeling with a CAD-system (CAD-model)

*Extract by*

*Lecture material for a CAD-course Nov. 97 Royal Institute of Technology, Sweden Hannu Penttilä*



# Computer Aided Design

*Modellazione o processo che l'elaboratore utilizza per gestire informazioni somministrate o ricercate*

*Una modellazione non si concretizza necessariamente in una rappresentazione grafica*

Norma Sperimentale UNI n°9510

# Computer Aided Design

Le caratteristiche di un sistema CAD:

- Produzione automatica di entità geometriche complesse;
- Modifica rapida del disegno (muovi, estendi, taglia, ruota, rimuovi..);
- Distribuzione di entità per piani di lavoro (per colore, per tipo di linea ecc...) che possono essere visualizzati in qualsiasi ordine;
- Dimensionamento e misurazione automatici;
- Accuratezza ad ogni rapporto di scala;
- Visualizzazione dell'oggetto da qualsiasi angolazione o prospettiva;
- Relazione tra disegno, testo e/o files di dati.

# Computer Aided Documentation



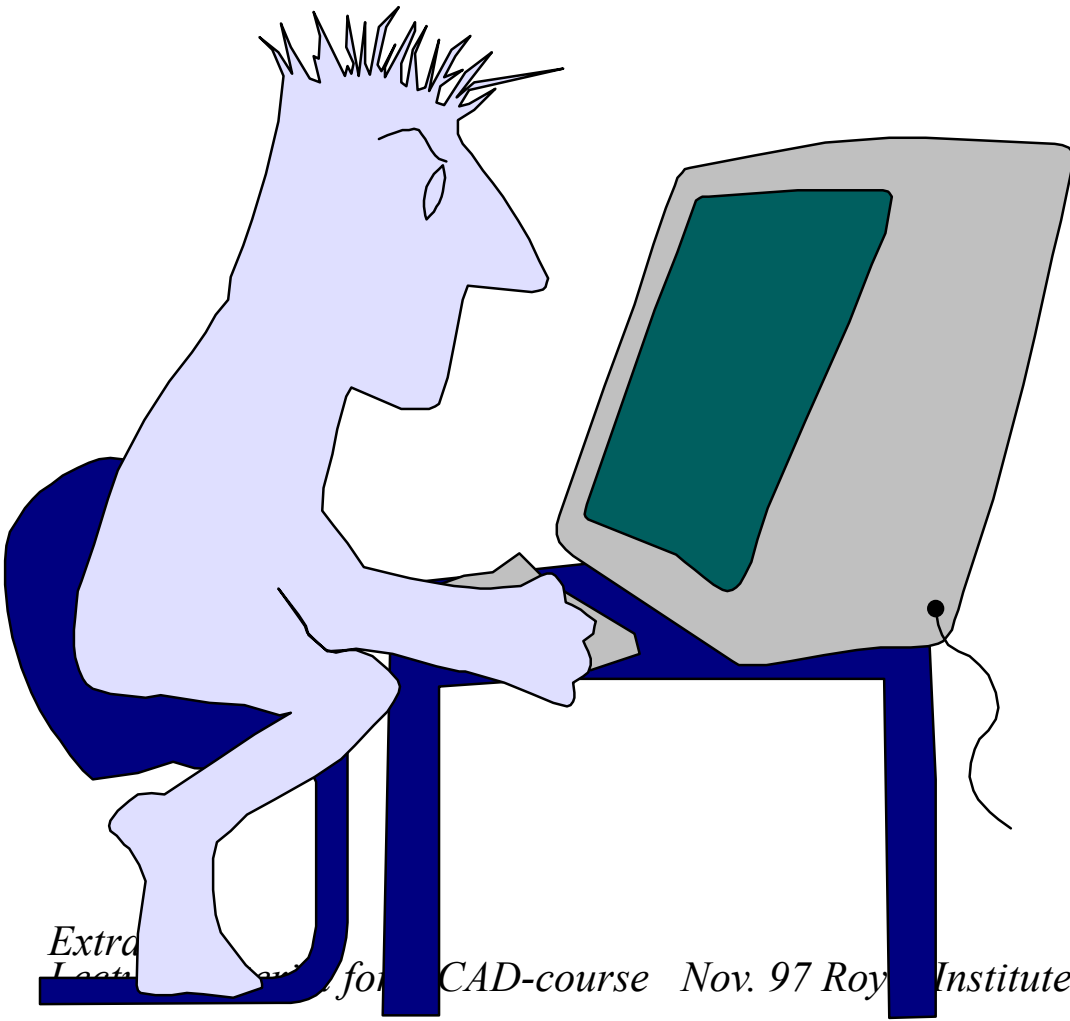
**How to customize  
AutoCAD and  
live happy too**

# User Interface

The interface should generally be understood to be "**the way of using a computing system**".

CAD-applications' interfaces can often be **customized** to meet the users needs.

A proper CAD-interface should be logical, straightforward and rational - although clumsy interfaces can also be operated effectively.



# Customisation Objectives

- Make information **intellegible** to your reader;
- Allow for **integration** and subsequent **correlation** of related type of data ;
- **Anticipate** the ways in wich it may be **interrogated** both now and in the future;
- **Be interactive** to facilitate exchange of information.

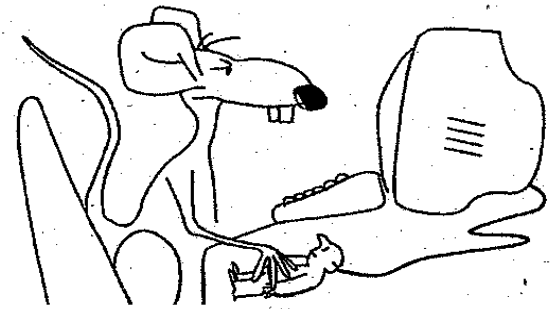
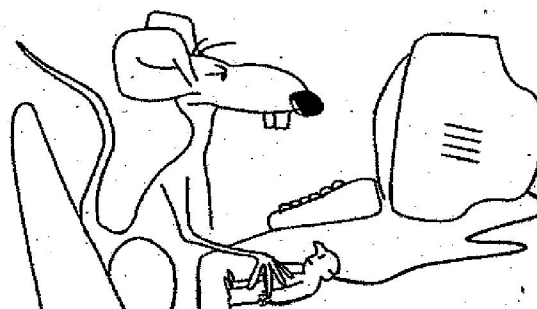
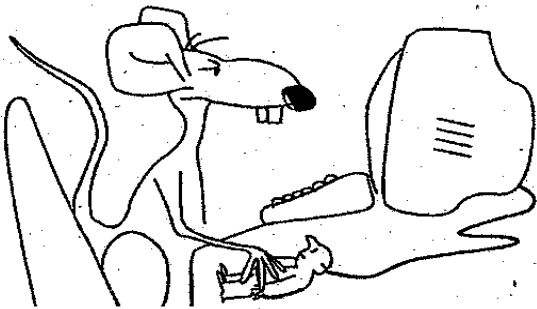
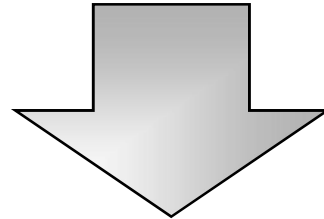


# What that computer scientist dont have to do!

- The computer scientist are not (do not have to be), the customers of the system. The procedures must be obvious.
- The software are all yet available. We have to design only variations and customization.
- To customize don't means to reduce or to banalize. It's only a code problem.
- Systems go planned on the base of the requirements of the final customer. He knows the own field.

# What that customer dont have to do!

- customer is not a computer programmer.
- The customer must be put in a position to using the program employing the procedures that it are useful
- The technology must be transparent.



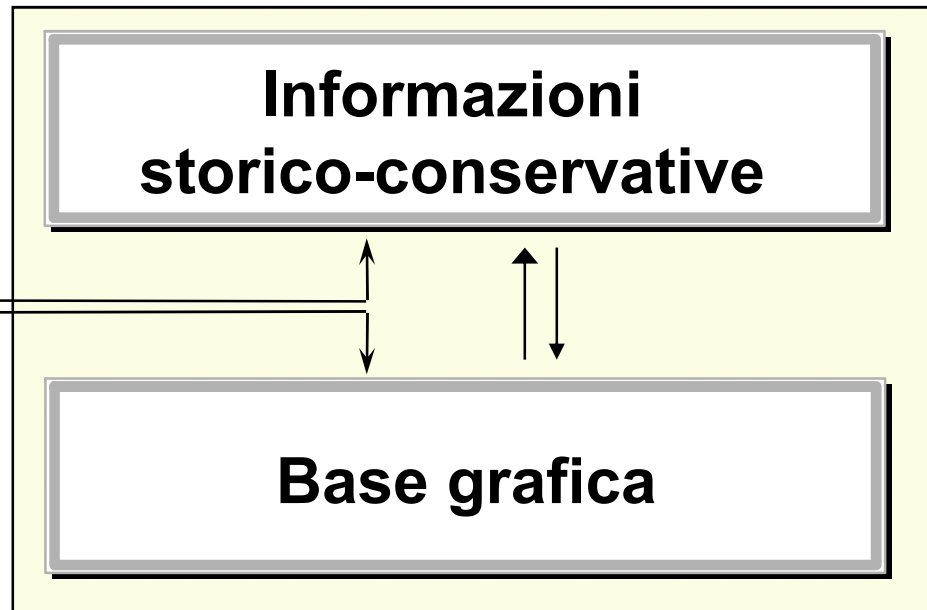
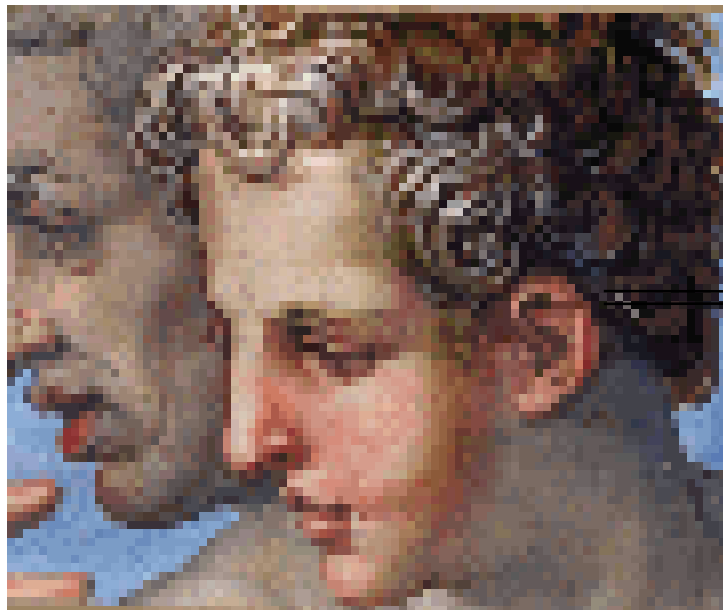


**Documentazione e  
informatizzazione**



**I modelli  
nella/della  
documentazione**

# Componenti fisici



Il modello dell'oggetto è posto in relazione con il modello delle informazioni per garantirne la corrispondenza topografica.

Deve essere verificata la condizione di perfetta leggibilità dei due modelli che possano essere percepiti separatamente pur nel loro stato di sovrapposizione.



The title is centered on a horizontal yellow bar. On either side of the bar are four stacks of books, each with a white cover and a grey spine, rendered in a simple, sketchy style.

# Il modello dell'oggetto

Rappresentazione dell'oggetto, la cosiddetta “base grafica”

- a) i luoghi iconografici devono avere valore topografico; così da potervi riferire le localizzazioni dei tematismi storico-conservativi;
- b) la rappresentazione dell'iconografia, può assumere anche una veste grafica sintetica;
- c) il segno della rappresentazione iconografica deve essere distinto da quelli che si riferiscono al modello dei dati storico-conservativi.





# Il modello delle informazioni

Alla realizzazione del modello delle informazioni è preliminare **l'individuazione delle singole voci** dei dati da ascrivere alle diverse categorie.

Il passo successivo alla **creazione del lessico** e quello della definizione grafica di ogni suo termine.

Per definizione grafica delle voci lessicali si intende l'assunzione di un segno grafico convenzionale che non necessariamente debba evocare l'entità morfologica del dato a cui si riferisce.





# Il modello delle informazioni

To record manifestations of decay require that the individual phenomena can be recognized, defined and named

This may be done by:

- use a standard list of condition categories
- use a standard list specific for (wall paintings)
- determining/adjusting condition categories for each (painting)

(lorinda wang)





# Il modello delle informazioni

I dati qualitativi e quantitativi  
concernenti i dati storico conservativi  
**individuati**  
**selezionati**  
**raggruppati**  
all'interno delle singole Categorie.



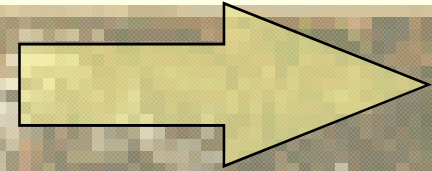
**Informazioni  
storico - conservative**

**La base grafica**

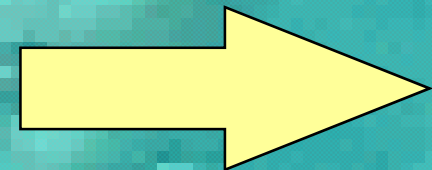


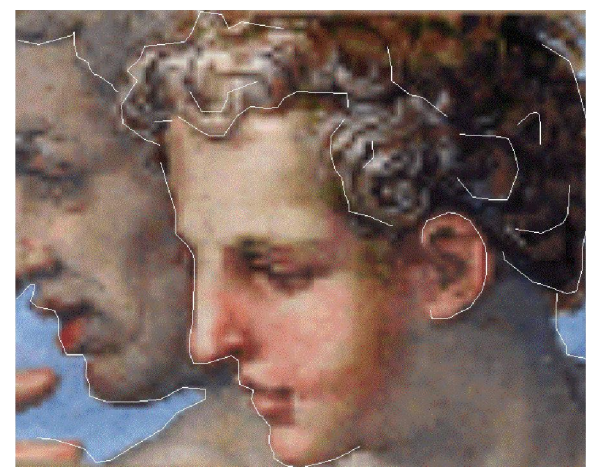
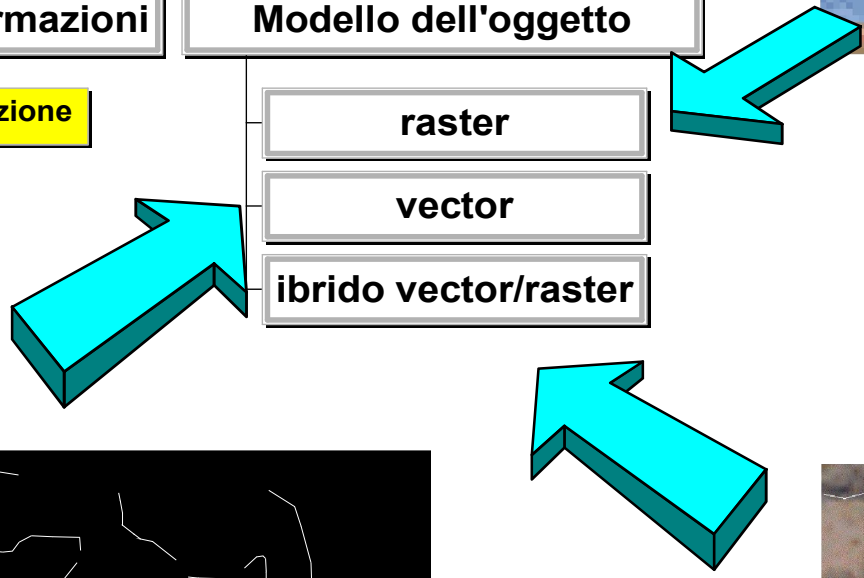
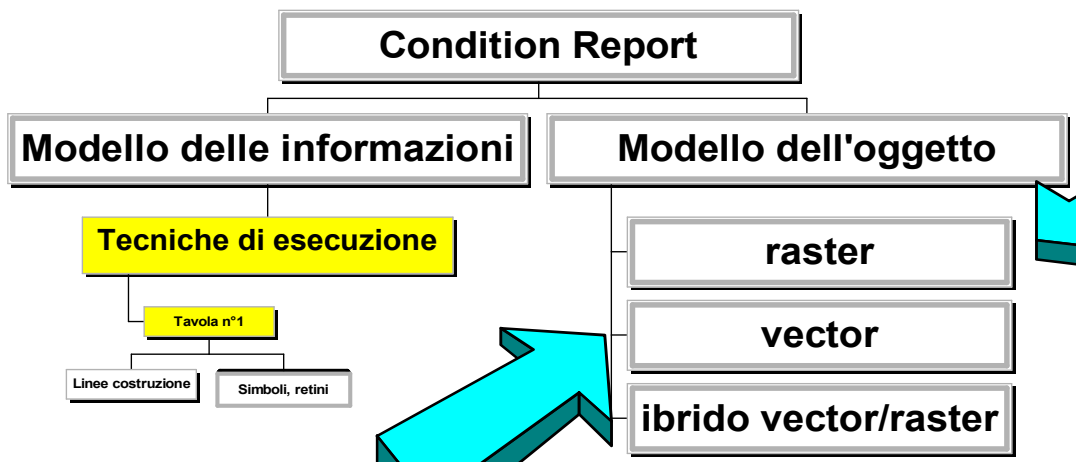
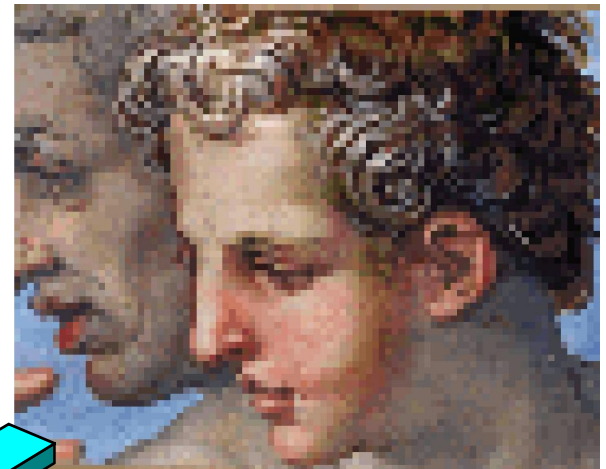


Informazioni storico conservative:  
la registrazione diretta in cantiere



La base grafica:  
costruzione della base grafica





Condition Report

Modello delle informazioni

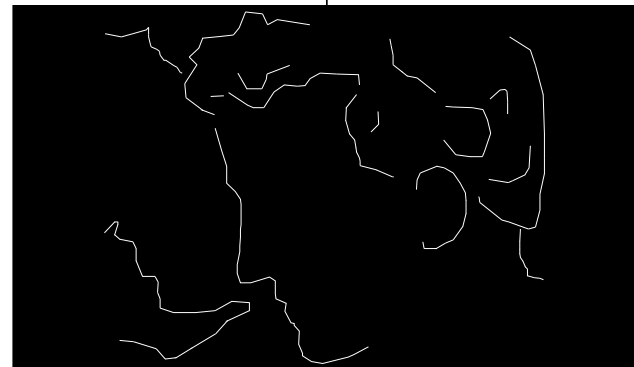
Modello dell'oggetto

Tecniche di esecuzione

Tavola n°1

Linee costruzione

Simboli, retini



Condition Report

Modello delle informazioni

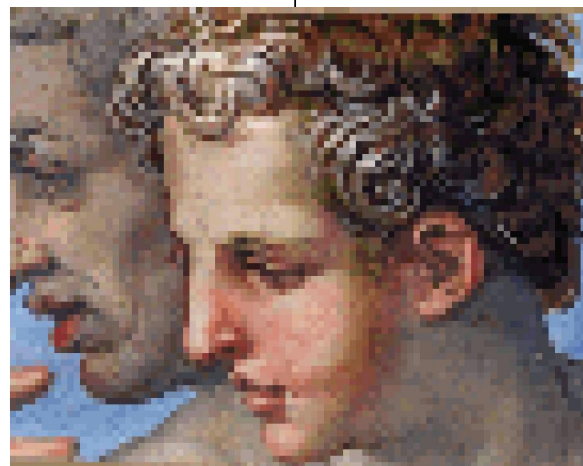
Modello dell'oggetto

Tecniche di esecuzione

Tavola n°1

Linee costruzione

Simboli, retini





# Data acquisition for digital mapping

- Fundamental importance is the acquisition of coordinate data in computer-compatible form which has been measured with sufficient accuracy and which has been encoded, structured and labelled with appropriate descriptive codes and attributes to enable it to be used in the available system.





# Data acquisition for digital mapping

- Field survey methods
- Photogrammetry
- Graphics digitizing methods
  - manual
  - automatic



# Source Instruments

# Accuracy

## Field Survey

Electronic tacheometry  
(total station equipped  
with digital data collectors)

Very high

## Photogrammetry

Analogue or analytical  
stereoplotting machines equipped  
with encoders and recorders

Very high

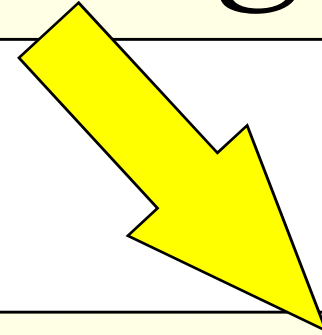
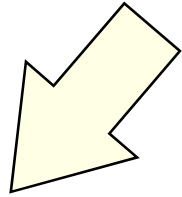
## Existing plans o maps

- Manual point and/or line following digitizing
- Semi-automatic line-following digitizing
- Fully automatic raster scan digitizing

Lower

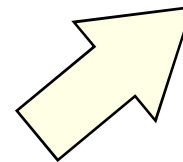
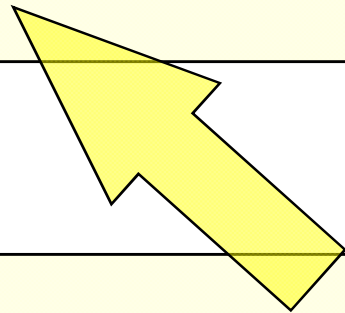


*Line following*



*Automatic operation*

*Manual operation*



*Raster scanning*





# *Line following*

## *Automatic operation*

- *High speed*
- *Expensive hardware*
- *Intervention required for coding*
- *High speed data recording*

## *Manual operation*

- *Low speed*
- *Inexpensive hardware*
- *Easy feature coding*
- *Low speed data recording*

- *Selective: only the required lines are measured.*
- *Less data to be recorded and stored.*
- *The length of time required for measurement is related to the total length of line to be digitized.*



# *Raster scanning*

## *Automatic operation*

- *High speed*
- *Expensive hardware*
- *Separate feature coding operation*
- *Extensive post processing operations*

## *Manual operation*

- *Low speed*
- *Enormous time required*

- *Non selective: whole sheet is scanned.*
- *Very large amount of data to be recorded and stored.*
- *The length of time required for measurement is related to the size of map sheet and resolution of each scan line.*



# Raster/vector



Base Material	Data Acquisition	Raster/Vector translation	Base for graphical recording	Software (example)	AutoCAD rel.
---------------	------------------	---------------------------	------------------------------	--------------------	--------------

## Vector based drawing

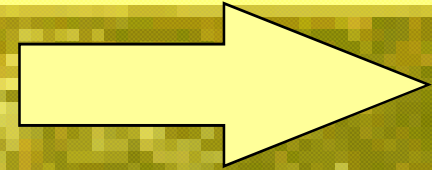
Drawing	Scanner	Automatic	Vector	Skorpio	All
Drawing	Scanner	Manual	Vector	CadOverlay ESP	All
Photo	Digital Camera	Manual	Vector	ArchLine	All

## Raster/vector drawing

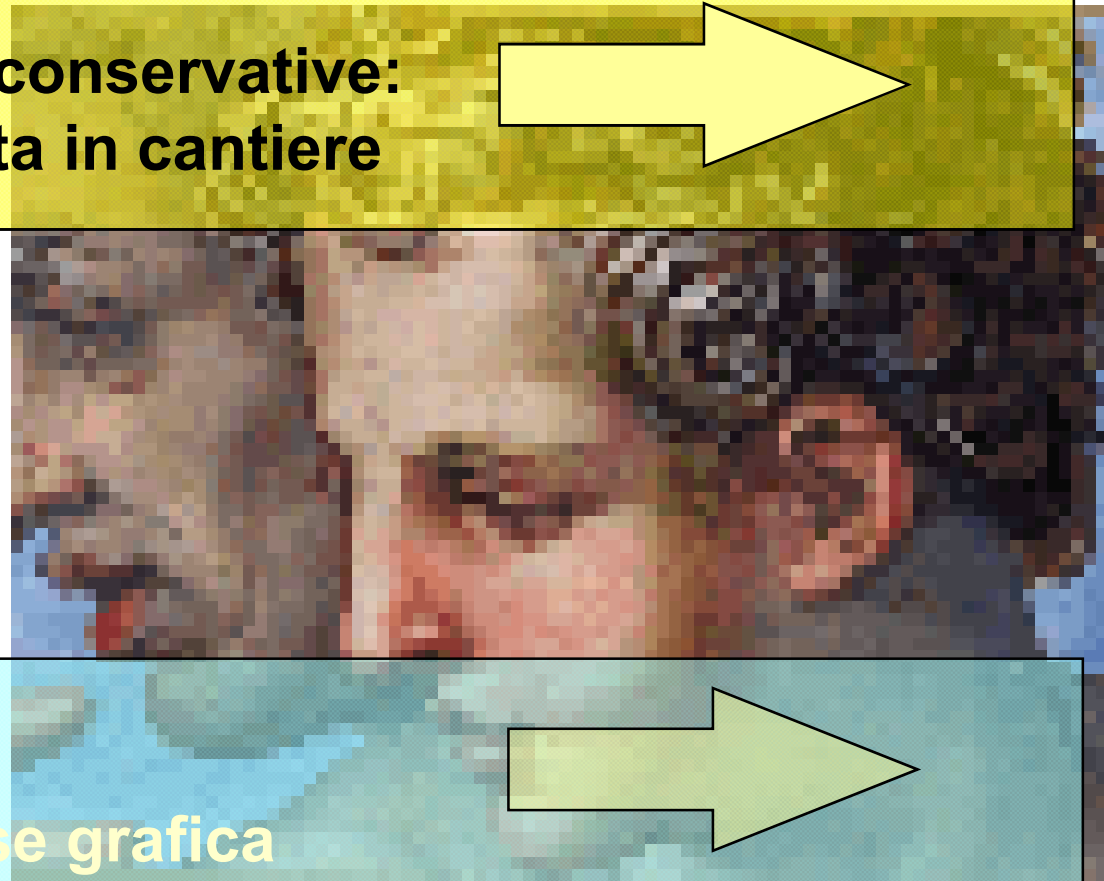
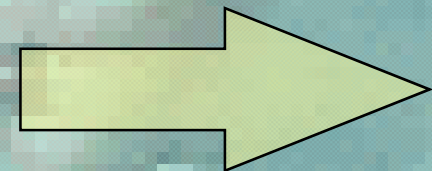
Photo	Scanner Digital Camera		Raster	CadOverlay GSX	All
Photo	Scanner Digital Camera		Raster	(V/Image)	AutoCAD rel.14 or a older release working with a visualization software.

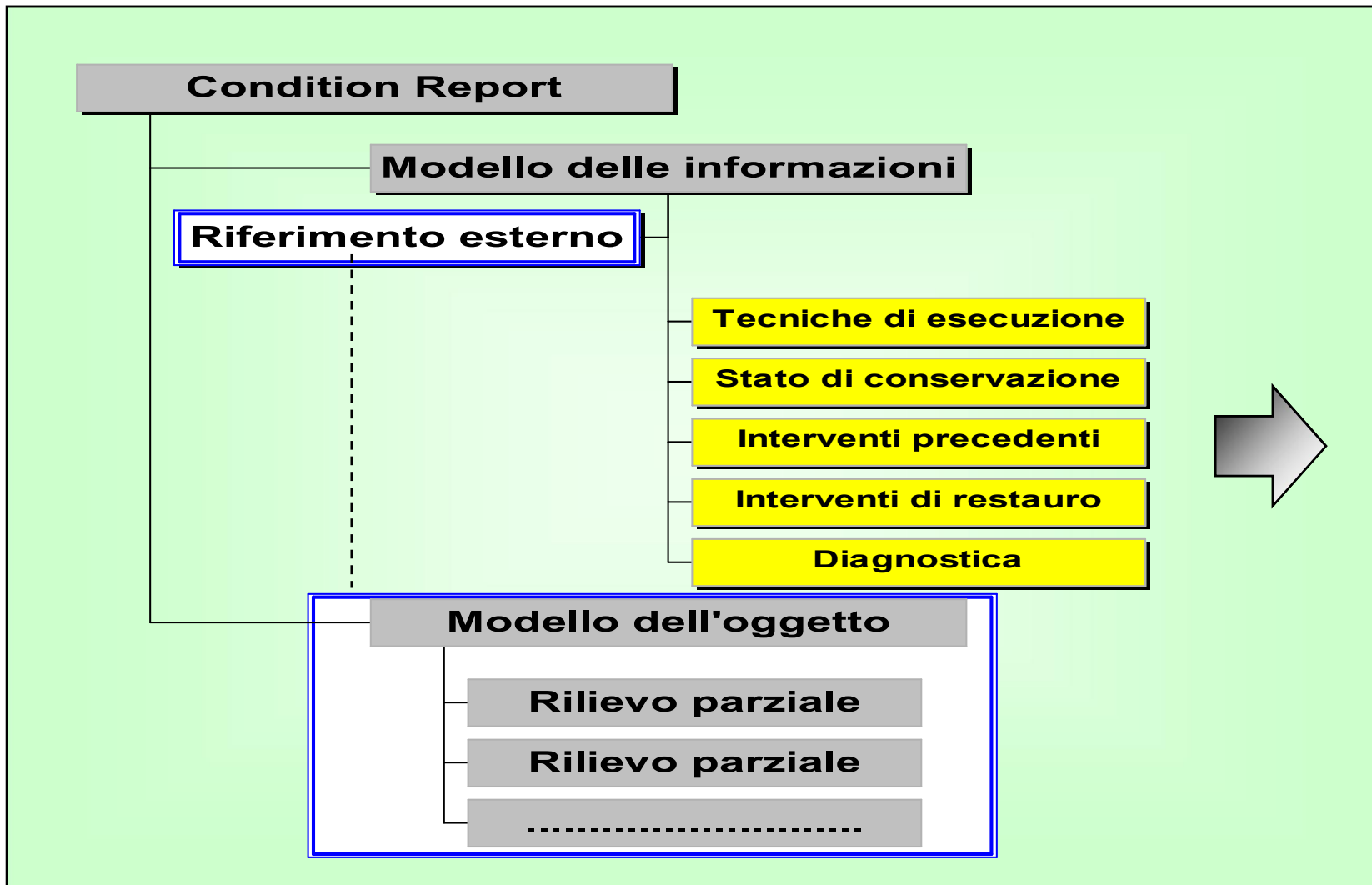


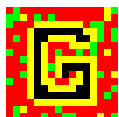
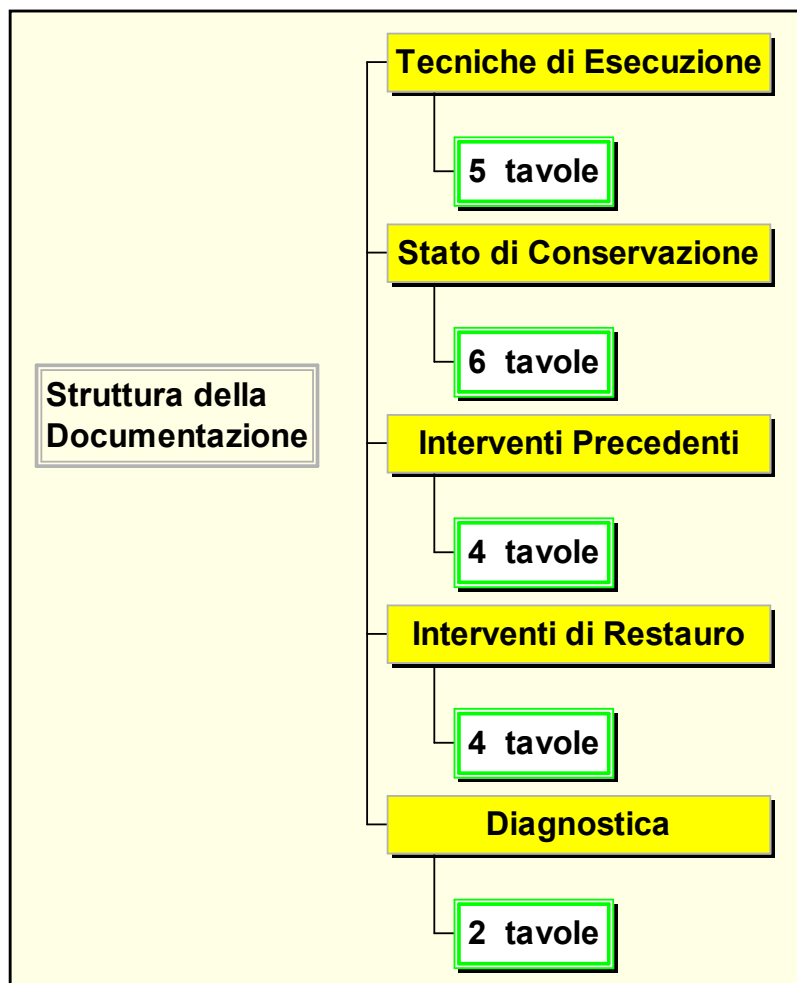
**Informazioni storico conservative:  
la registrazione diretta in cantiere**



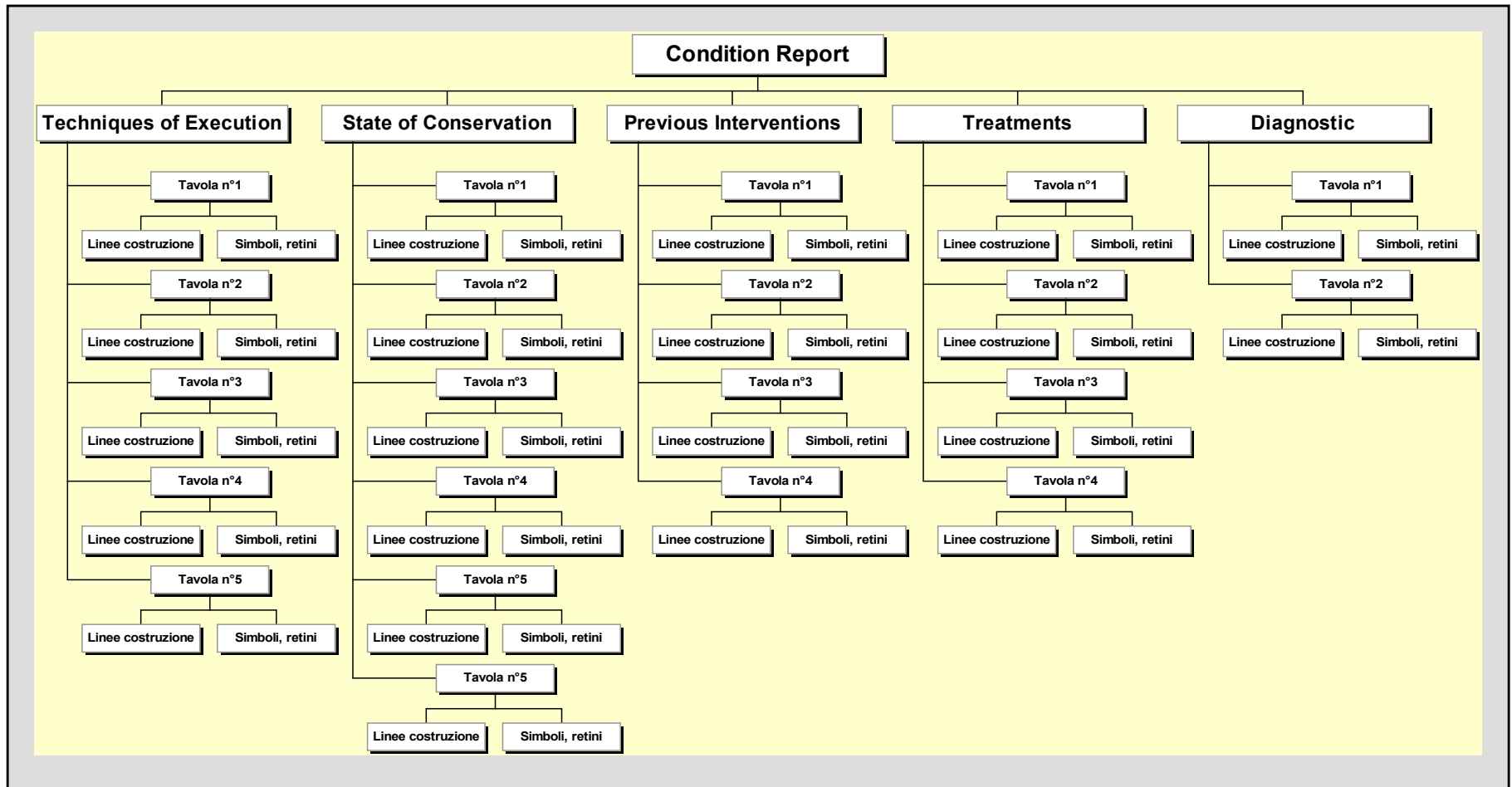
**La base grafica:  
costruzione della base grafica**

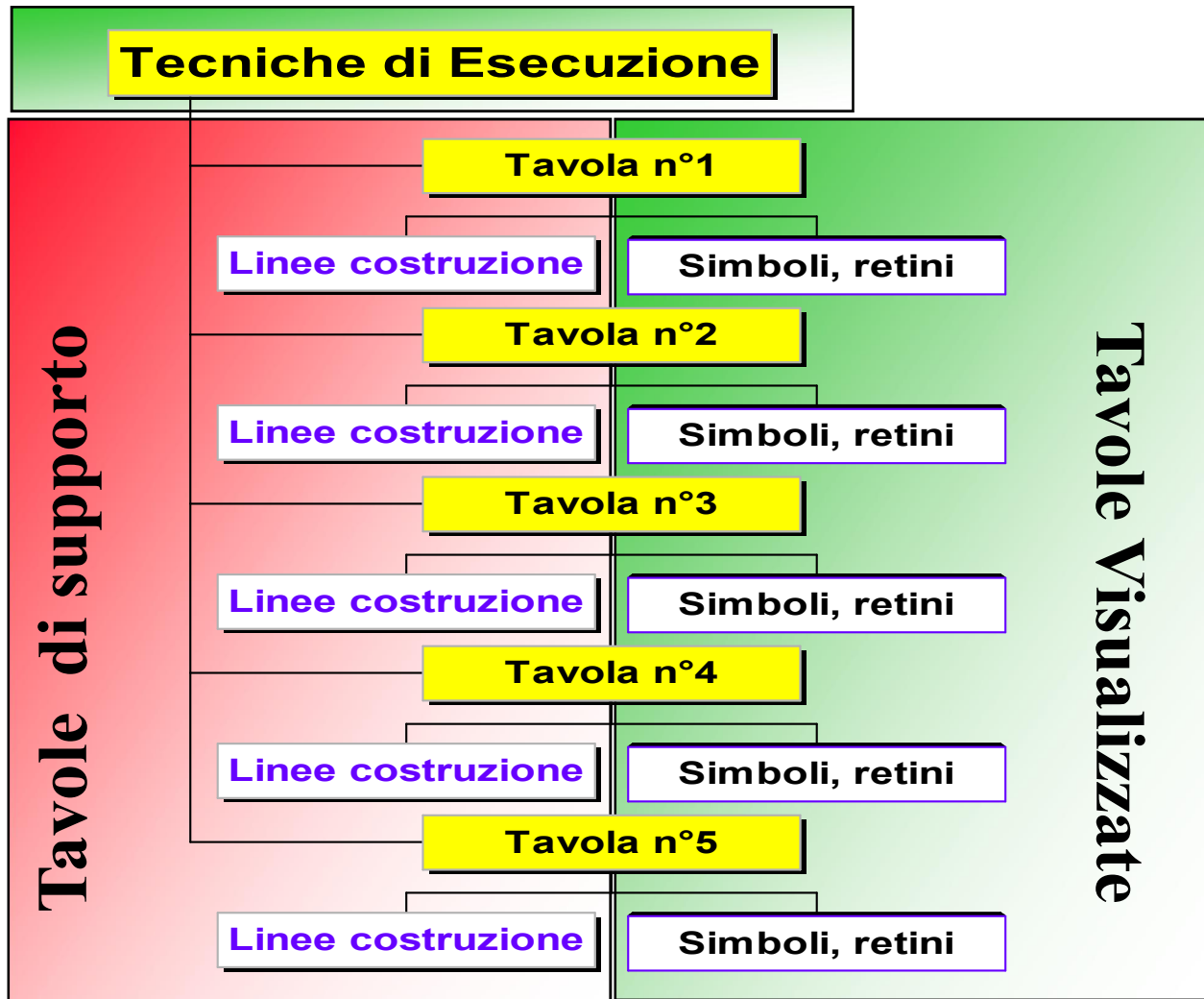






# Struttura della documentazione

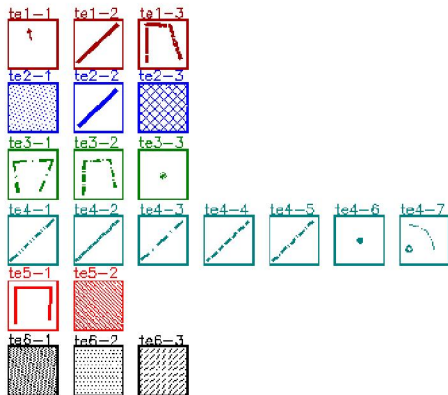






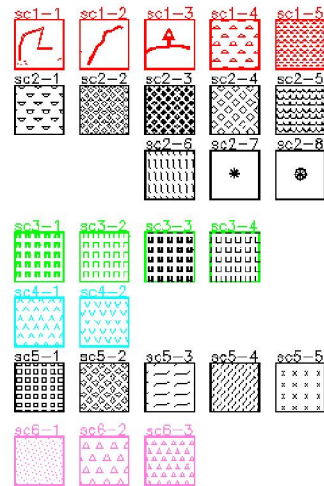
**TECNICHE D'ESECUZIONE**

- TE1-1 giornata - freccia
- TE1-2 giornata - linea
- TE1-3 giornata (pattuccia) - linea
- TE2-1 parti lavorate in rilievo
- TE2-2 battitura su stucco
- TE2-3 impronta di punzone
- TE3-1 filo battuto su intonaco fresco
- TE3-2 filo battuto colorato su intonaco fresco
- TE3-3 foro di chiodo
- TE4-1 incisione su intonaco fresco
- TE4-2 incisione su intonaco secco
- TE4-3 incisione indiretta da cartone
- TE4-4 spolvero ad intonaco
- TE4-5 spolvero a colore
- TE4-6 filo di canapa
- TE4-7 arco e foro d'impasto
- TE5-1 disegno preparatorio a "fresco" (tratto)
- TE5-2 disegno preparatorio a "fresco" (campitura)
- TE6-1 lamina metallica
- TE6-2 pellicola pittorica a secco
- TE6-3 pentimento



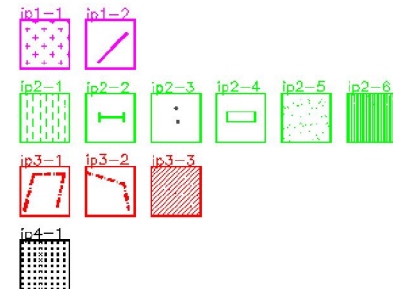
**STATO DI CONSERVAZIONE**

- Intonaco
- SC1-1 fratturazione
- SC1-2 resaturazione
- SC1-3 distacco della struttura muraria
- SC1-4 difetto di adesione dell'intonaco (lieve eretto)
- SC1-5 difetto di adesione dell'intonaco (grave eretto)
- SC2-1 difetto di coesione dell'intonaco
- SC2-2 lacuna dell'intonaco con arriccio in vista
- SC2-3 lacuna dell'intonaco con muratura in vista
- SC2-4 aree con lacune dell'intonaco per subfiorescenze saline
- SC2-5 deformazione dell'intonaco
- SC2-6 abrasione dell'intonaco
- SC2-7 battocciolo
- SC2-8 lacuna da battocciolo
- Pellicola pittorica
- SC3-1 difetto di adesione della pellicola pittorica
- SC3-2 difetto di coesione della pellicola pittorica
- SC3-3 difetto di adesione della lamina metallica
- SC3-4 difetto di coesione della lamina metallica
- SC4-1 alterazione cromatica della pellicola pittorica
- SC4-2 alterazione cromatica della lamina metallica
- SC5-1 lacuna della pellicola pittorica
- SC5-2 lacuna della lamina metallica
- SC5-3 abrasione della pellicola pittorica
- SC5-4 abrasione della lamina metallica
- SC5-5 aree con microlacune
- SC6-1 velo bianco
- SC6-2 formazioni cristalline aghiformi in stadio iniziale
- SC6-3 formazioni cristalline aghiformi in stadio avanzato



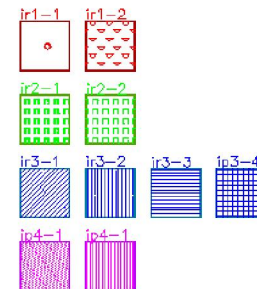
**INTERVENTI PRECEDENTI**

- IP1-1 imprimatura di velatino
- IP1-2 scollatura, egocollatura
- IP2-1 parte di intonaco distaccata e ridessa
- IP2-2 strappa, elemento metallico
- IP2-3 chiodo
- IP2-4 filo di canna
- IP2-5 stuccatura non reintegrata
- IP2-6 stuccatura reintegrata
- IP3-1 tassello
- IP3-2 testimone
- IP3-3 ridipintura
- IP4-1 pellicola lucida da adesivo/consolidante



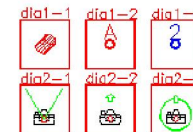
**INTERVENTI DI RESTAURO**

- IR1-1 risanamento difetti adesione intonaco
- IR1-2 risanamento difetti coesione intonaco
- IR2-1 risanamento difetti adesione pellicola pittorica
- IR2-2 risanamento difetti coesione pellicola pittorica
- IP3-1 pittura chimica
- IP3-2 pittura con sostanze solventi
- IP3-3 pittura con resine a scampo tonico
- IP3-4 rimozione di vecchie stuccature
- IP4-1 stuccature sottolvello a tratteggio
- IP4-2 stuccature reintegrate a tratteggio



**DIAGNOSTICA**

- DIA1-1 caratura
- DIA1-2 prelievi di superficie
- DIA1-3 prelievi di profondità
- DIA2-1 fotografie d'insieme
- DIA2-2 fotografie di dettaglio
- DIA2-3 macio-fotografie



**ROMA: Chiesa di Santa Cecilia in Trastevere**  
**Legenda dei simboli grafici impiegati per il rilevamento**  
**delle tecniche di esecuzione, dello stato di conservazione**  
**degli interventi precedenti e degli interventi di restauro**

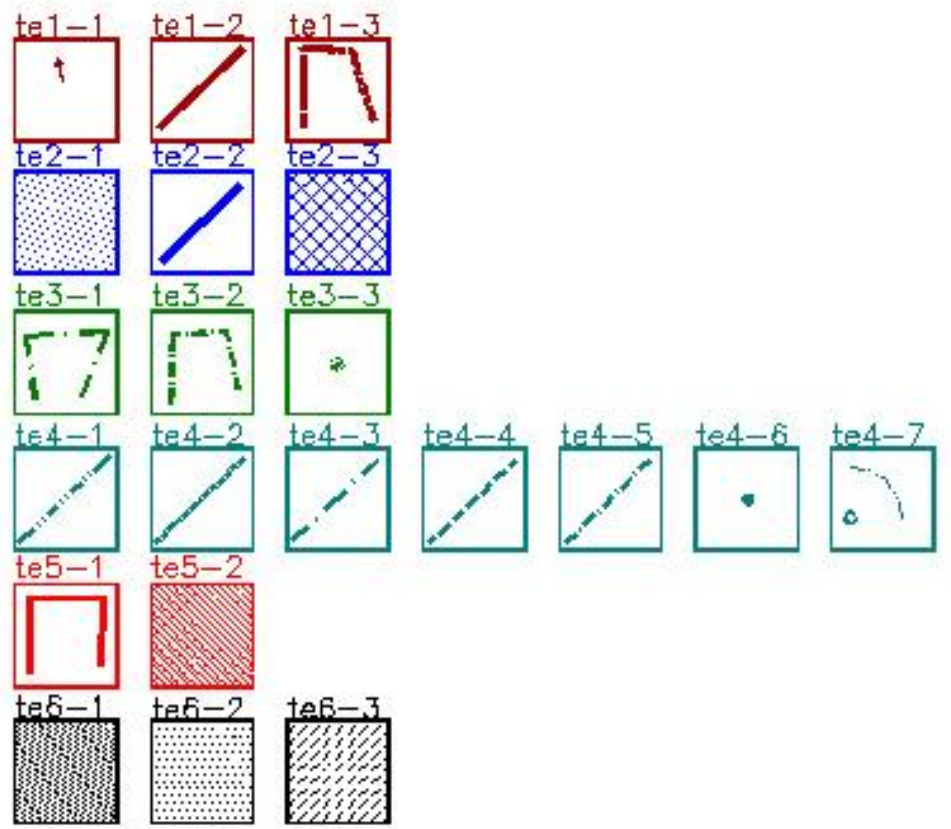
by buzzanca, esposito, garlini, parisi, resalto



Giancarlo Buzzanca

TECNICHE D'ESECUZIONE

- TE1-1 giarnata - freccia
- TE1-2 giarnata - linea
- TE1-2 giarnata (ipatetica) - linea
- TE2-1 parti lavorate in rilievo
- TE2-2 battitura di stecca
- TE2-3 impressione di punzone
- TE3-1 filo battuto su intonaco fresco
- TE3-2 filo battuto colorato su intonaco fresco
- TE3-3 foro di chiodo
- TE4-1 incisione su intonaco fresco
- TE4-2 incisione su intonaco secco
- TE4-3 incisione indiretta da cartone
- TE4-4 spolvero ad incisione
- TE4-5 spolvero a colore
- TE4-6 foro di compasso
- TE4-7 arco e foro di compasso
- TE5-1 disegno preparatorio a "fresco" (tratto)
- TE5-2 disegno preparatorio a "fresco" (campitura)
- TE6-1 lamina metallica
- TE6-2 pellicola pittorica a secco
- TE6-3 pentimento



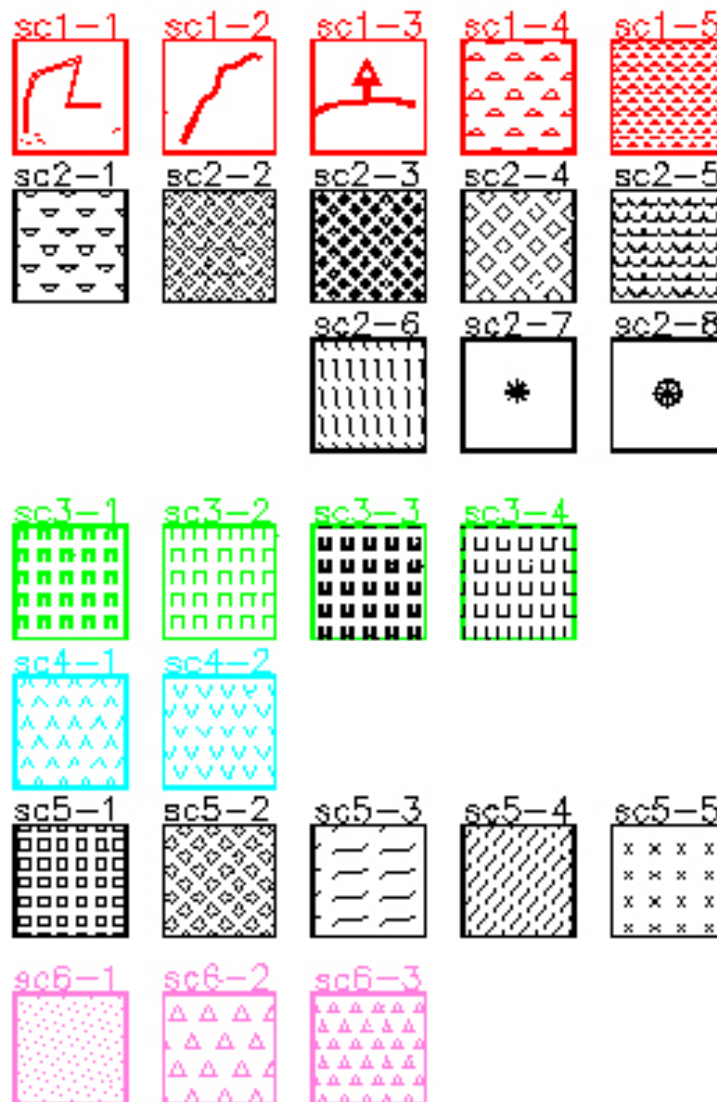
## STATO DI CONSERVAZIONE

### Intonaco

- SC1-1 fratturazione  
 SC1-2 fessurazione  
 SC1-3 dislivello della struttura muraria  
 SC1-4 difetto di adesione dell'intonaco (lieve entità)  
 SC1-5 difetto di adesione dell'intonaco (grave entità)  
  
 SC2-1 difetto di coesione dell'intonaco  
 SC2-2 lacuna dell'intonaco con arriccio in vista  
 SC2-3 lacuna dell'intonaco con muratura in vista  
 SC2-4 area con lacuna dell'intonaco per subfiorescenza saline  
 SC2-5 deformazione dell'intonaco  
 SC2-6 abrasione dell'intonaco  
 SC2-7 bottaccio  
 SC2-8 lacuna da bottacciaia

### Pellicola pittorica

- SC3-1 difetto di adesione della pellicola pittorica  
 SC3-2 difetto di adesione della pellicola pittorica  
 SC3-3 difetto di adesione della lamina metallica  
 SC3-4 difetto di adesione della lamina metallica  
  
 SC4-1 alterazione cromatica della pellicola pittorica  
 SC4-2 alterazione cromatica della lamina metallica  
  
 SC5-1 lacuna della pellicola pittorica  
 SC5-2 lacuna della lamina metallica  
 SC5-3 abrasione della pellicola pittorica  
 SC5-4 abrasione della lamina metallica  
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 SC6-2 formazioni cristalline aghiformi in stadio iniziale  
 SC6-3 formazioni cristalline aghiformi in stadio avanzato



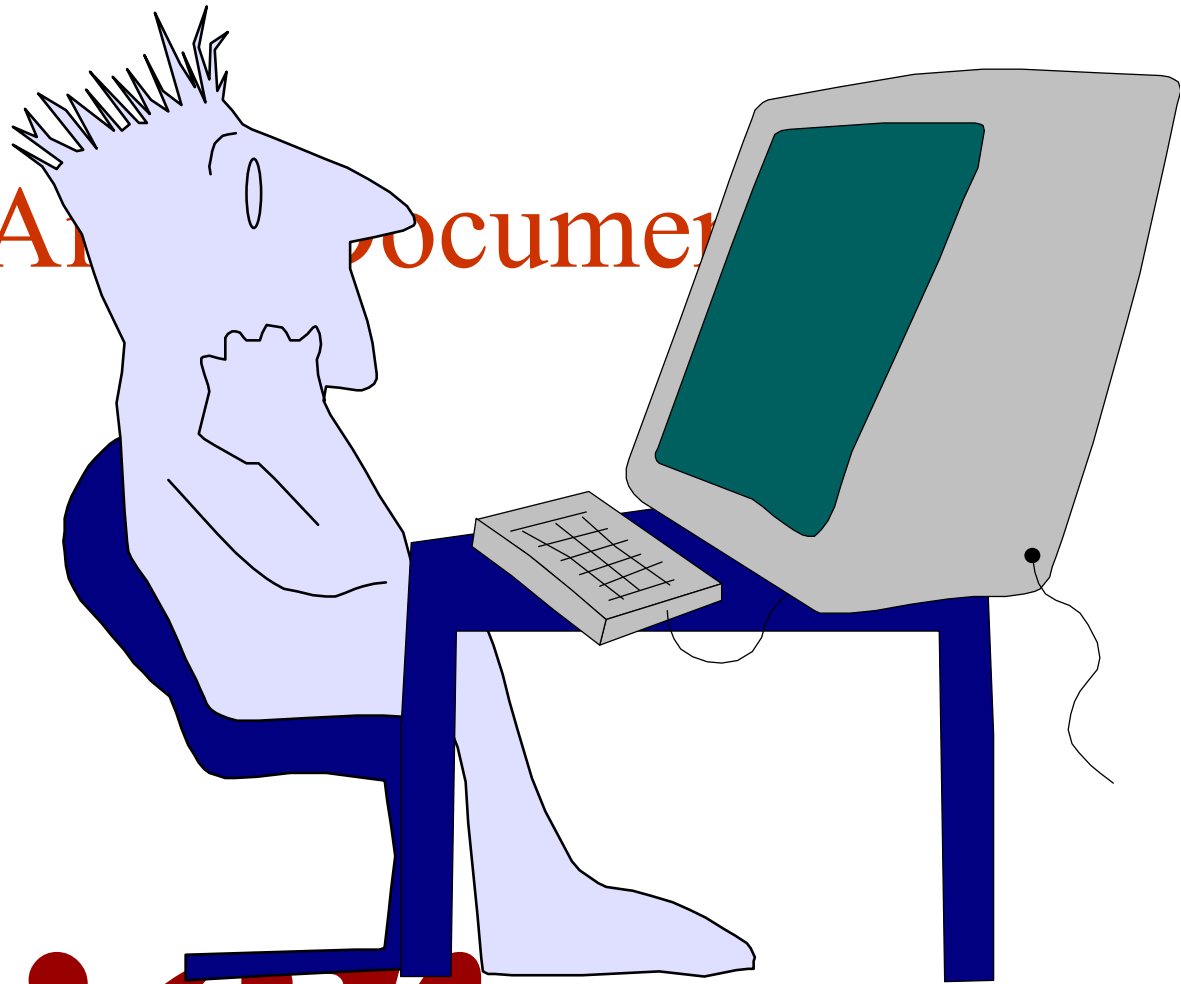
Four stacks of books are arranged horizontally across the top of the slide. Each stack consists of several books with white covers and dark spines, stacked on top of each other. The books are slightly offset from each other, creating a sense of depth.

# Difficoltà tecniche

- Rappresentare i vari livelli di intensità di ciascun fenomeno di deterioramento;
- Registrazione della sovrapposizione dei fenomeni
- Rappresentazione di condizioni su superfici non piane
- Trascrizione di informazioni aggiuntive tratte dalla documentazione esistente



Computer Applications and Documents

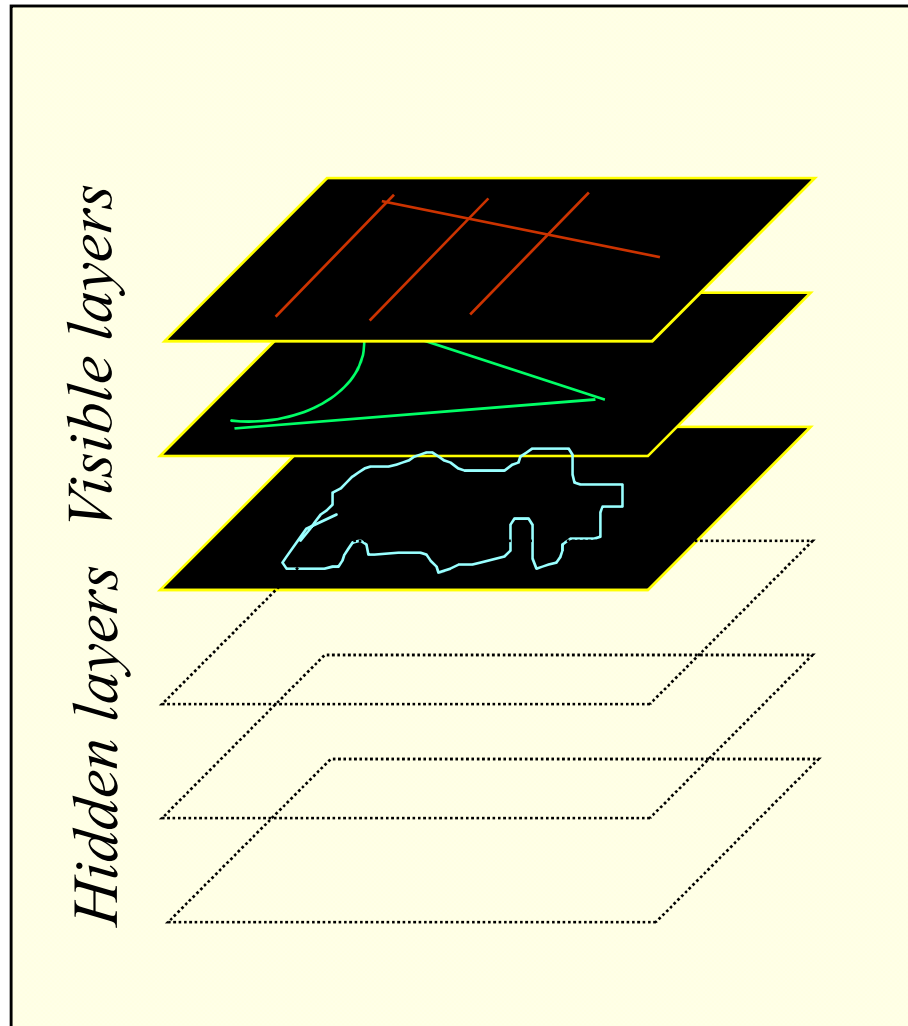


# Layer



*Giancarlo Buzzanca*

# Layers



*Layers are one of the most important methods in structuring CAD-primitives and material.*

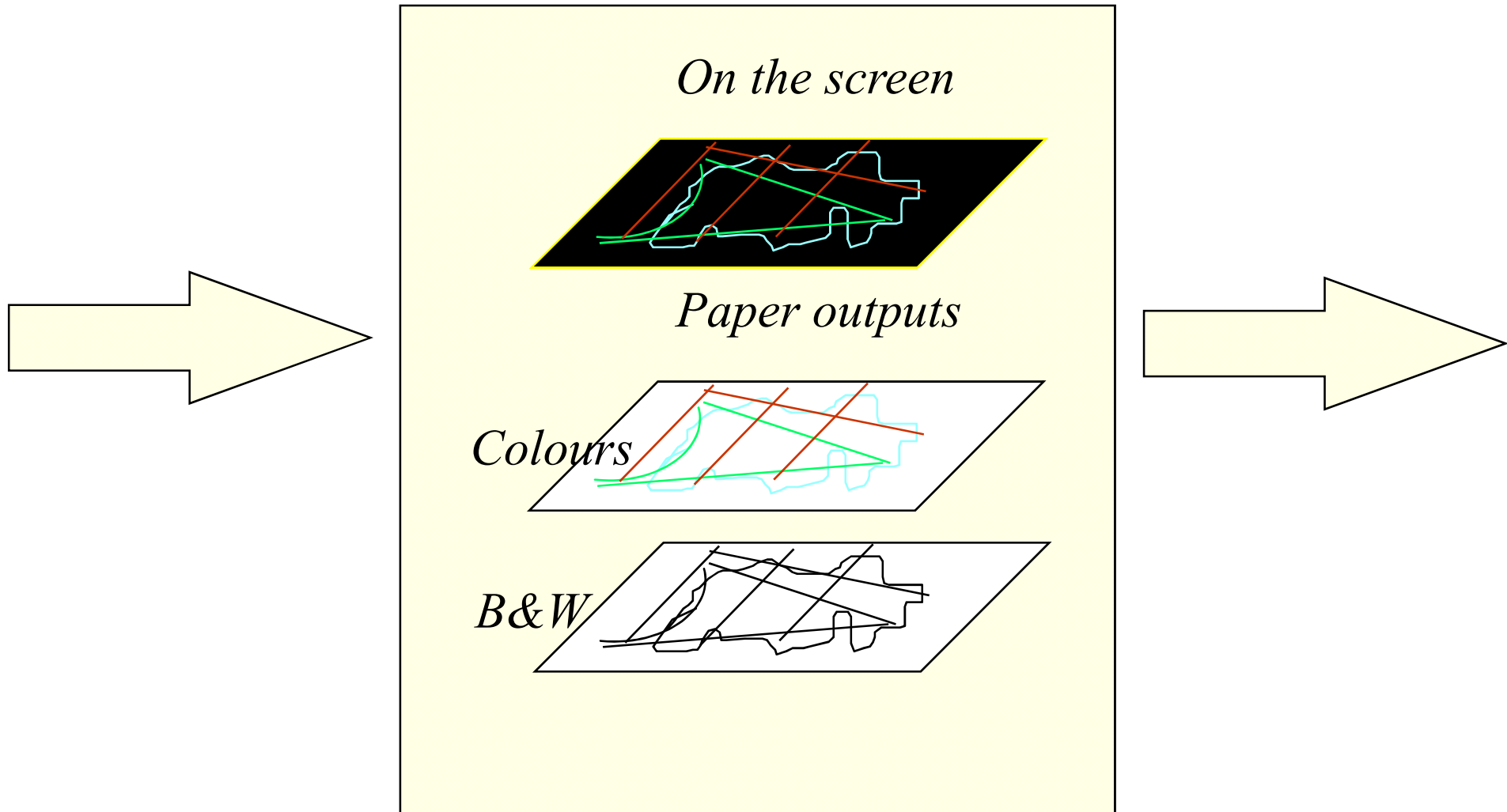
*Theoretically all different elements could be put into separate layers.*

*They are just like thin overhead films layered on top of each other.*

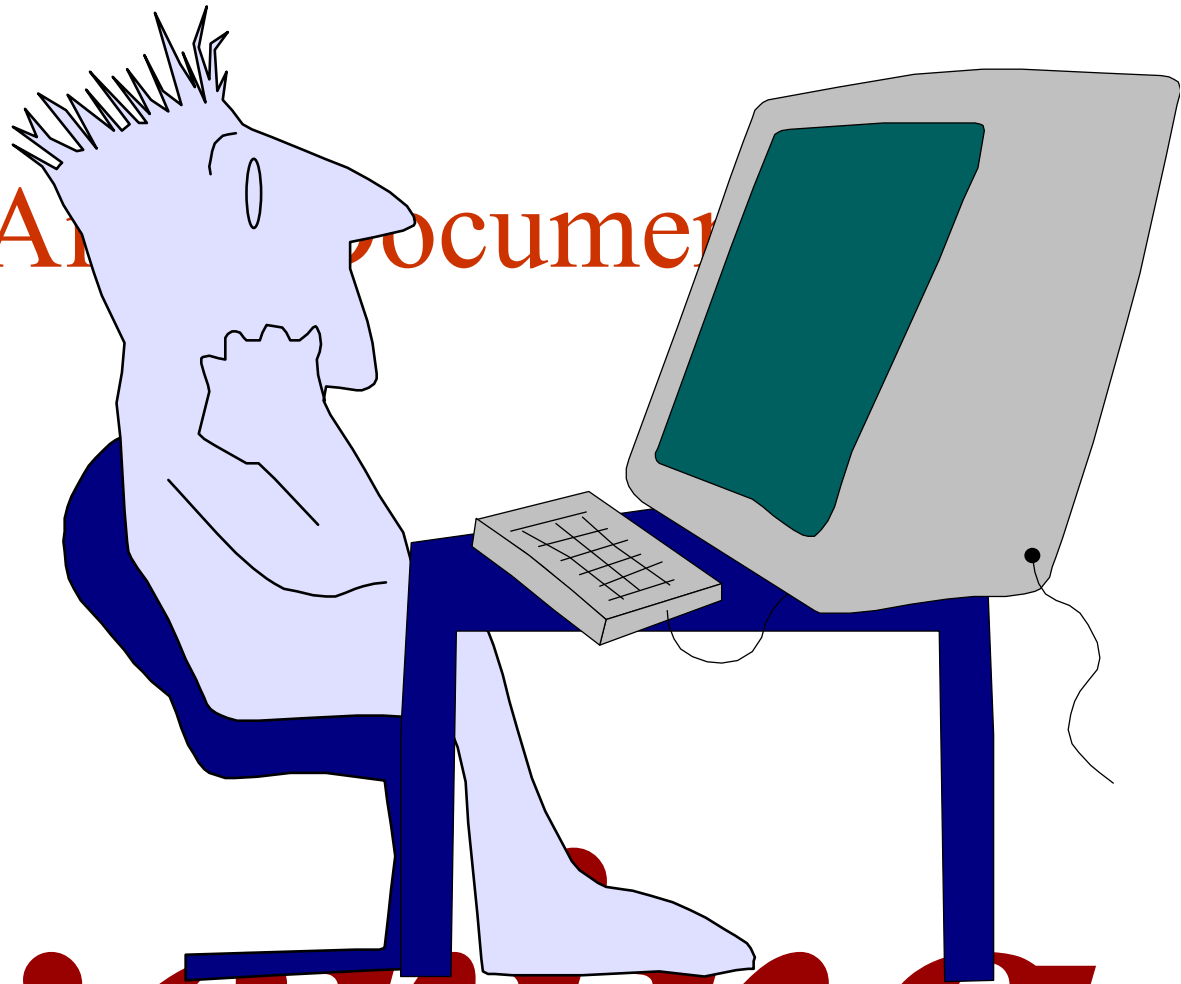
*A layer can be set to visible or invisible (in some systems also other possibilities), hence it controls whether an element is visible on the screen and in the output.*



# *Layers*



Computer Architecture documents



# Layering



*Giancarlo Buzzanca*



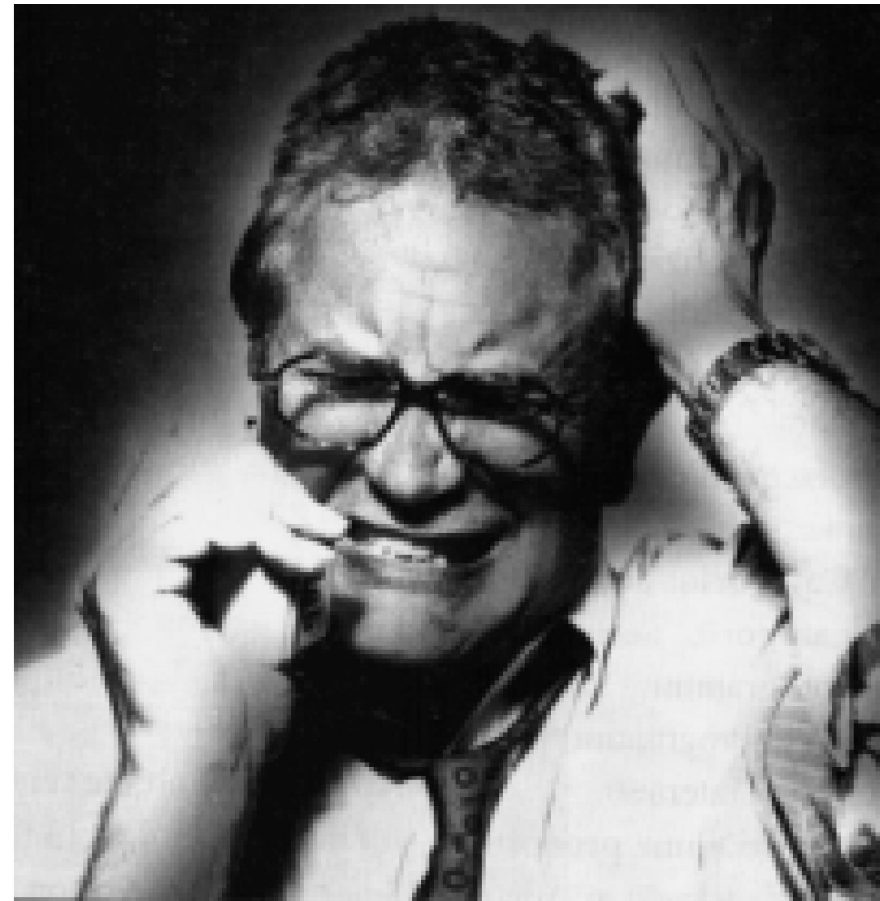
# The drama of the standards



**International  
Organisation for  
Standardisation**



**Italian  
Unification  
Committee**



Giancarlo Buzzanca

# *Introduction to the layering standard*

Lo standard è formato da 3 parti:

ISO 13567-1:1998

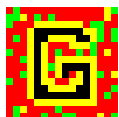
Technical product documentation -- Organization and naming of layers for CAD -- Part 1: Overview and principles

ISO 13567-2:1998

Technical product documentation -- Organization and naming of layers for CAD -- Part 2: Concepts, format and codes used in construction documentation

ISO/TR 13567-3:1999

Technical product documentation -- Organization and naming of layers for CAD -- Part 3: Application of ISO 13567-1 and ISO 13567-2

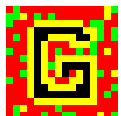


# *Introduction to the layering standard*

## *ISO 13567*

*Technical product  
documentation --  
Organization and  
naming of layers for  
CAD*

*The scope of the standard is to  
"establish the general principles of  
layer structuring within CAD files  
... for the purpose of controlling  
visibility and managing and  
communicating CAD file data"  
and to "cover the organisation of  
layers as applied to construction  
projects".*



# *Introduction to the layering standard*

***ISO 13567***

***Technical product  
documentation --  
Organization and  
naming of layers for  
CAD***

Technical Commission TC 10

SC 8 (Construction documentation);

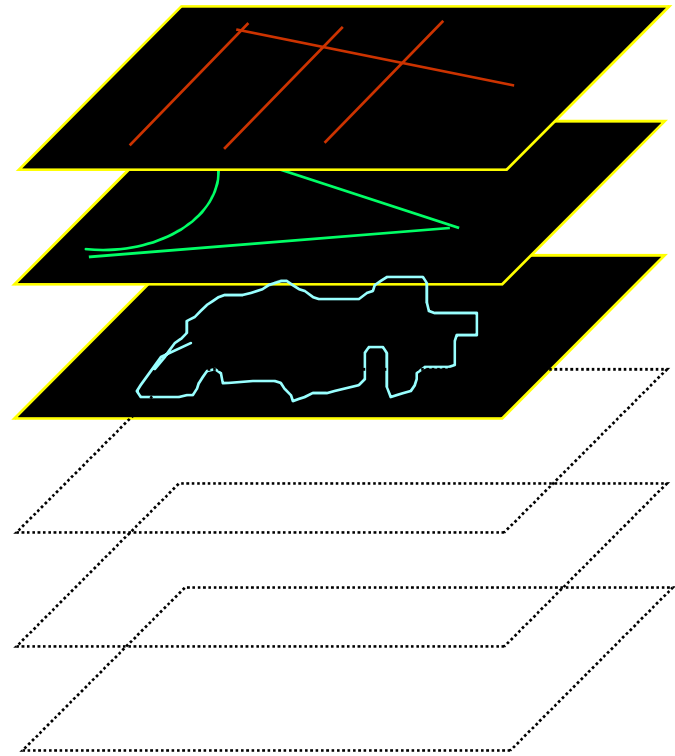
Rif. ICS: 01.110; 35.240.10.



# Layer naming techniques

**ISO 13567**

**Technical product  
documentation --  
Organization and  
naming of layers for  
CAD**



*The layer name is a string divided into fields, each with a fixed number of alphanumeric characters.*

*The first three fields are considered mandatory, while the remaining fields are optional.*

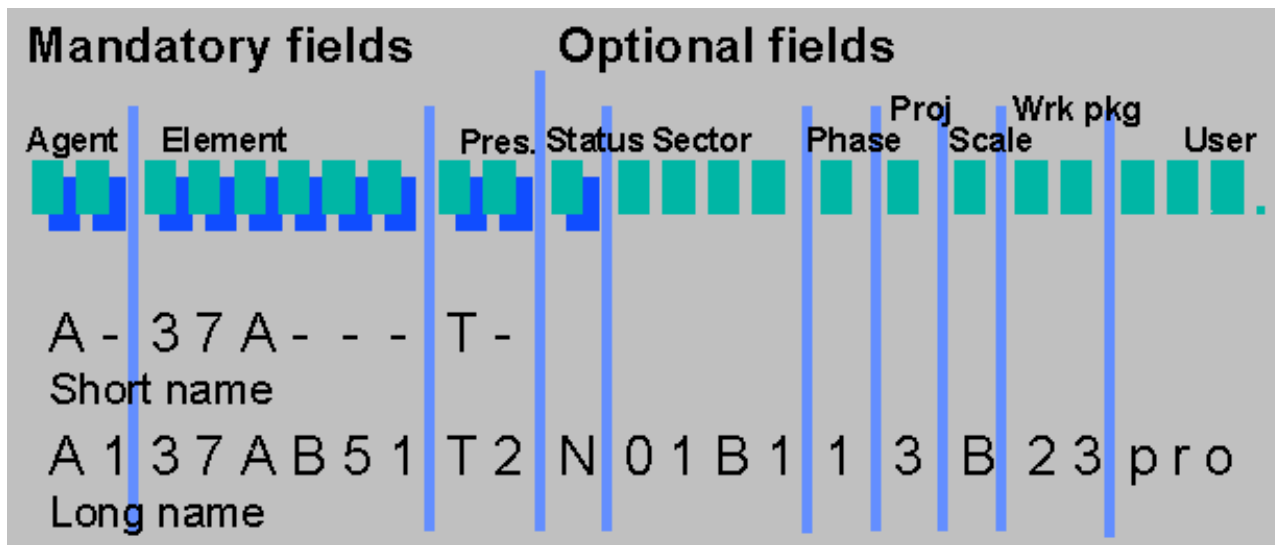
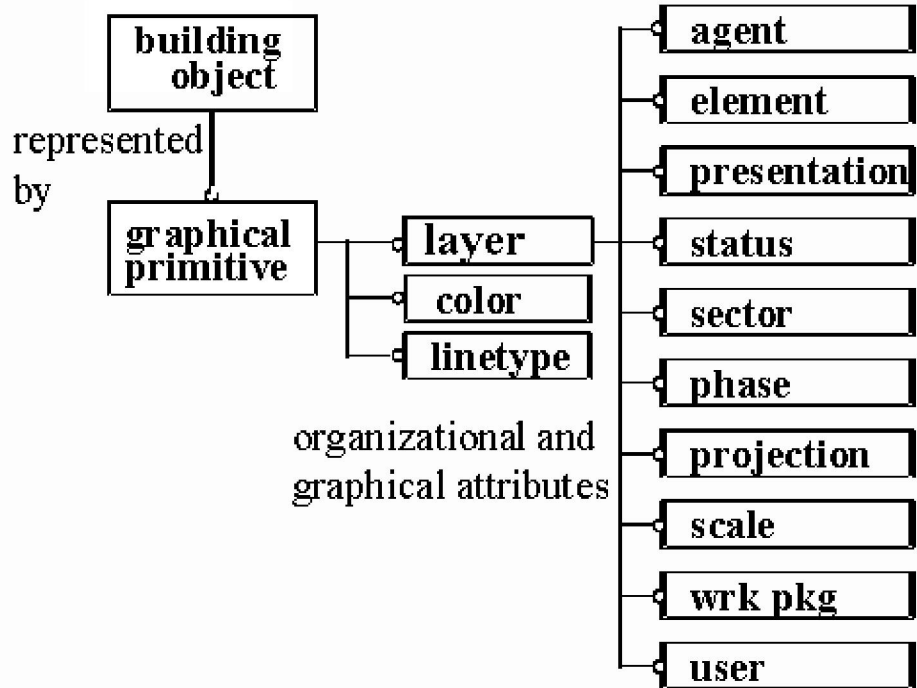
*Unused character positions are filled out with hyphens or underscore characters.*



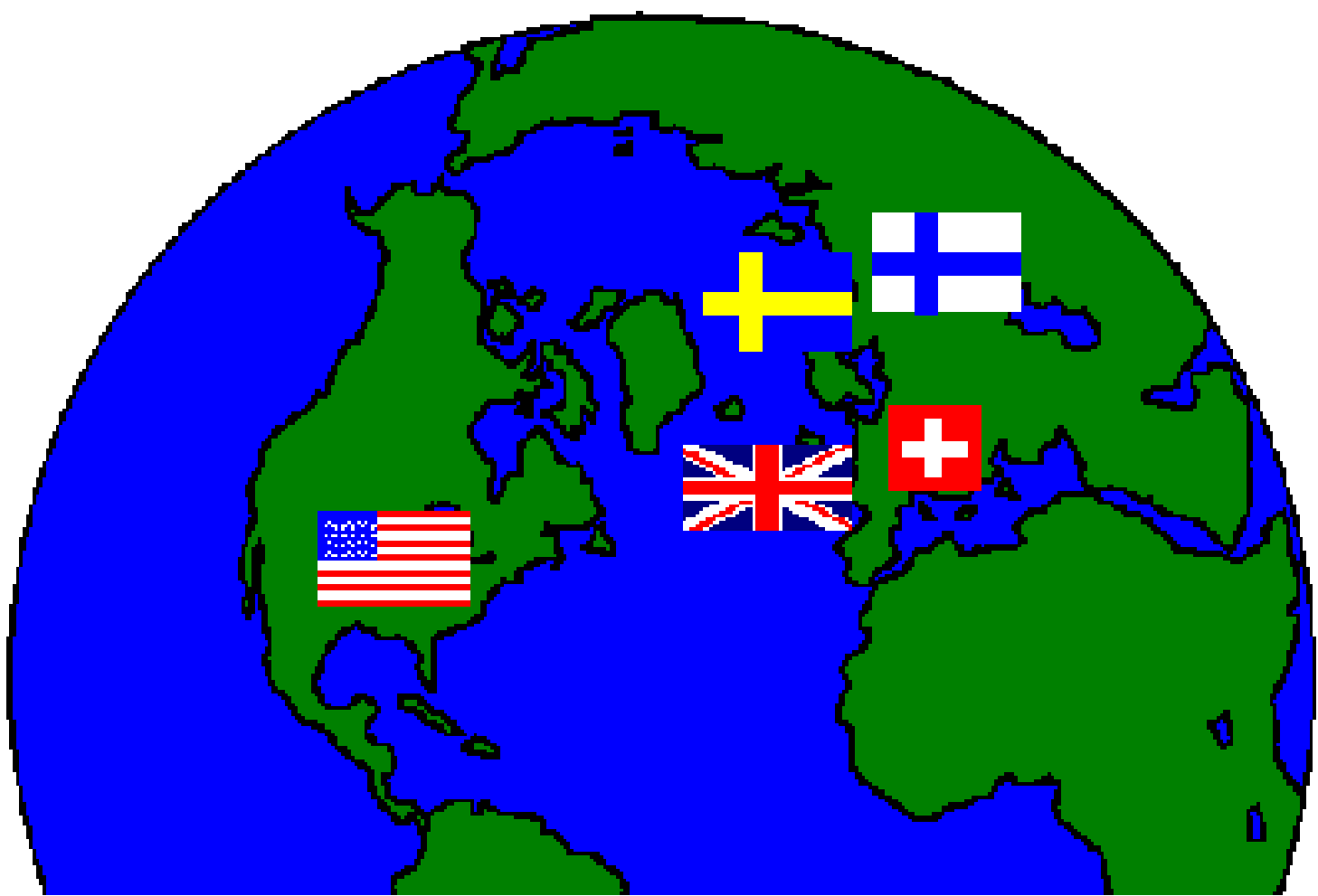
# Layer naming techniques

**ISO 13567**

**Technical product documentation -- Organization and naming of layers for CAD**



# Layer naming techniques



*Implementations based on ISO/DIS 13567 in combination with national classification standards are being issued in several countries*





# **Standards and Customised Menus in Condition Digital Recording**

*Giancarlo Buzzanca*



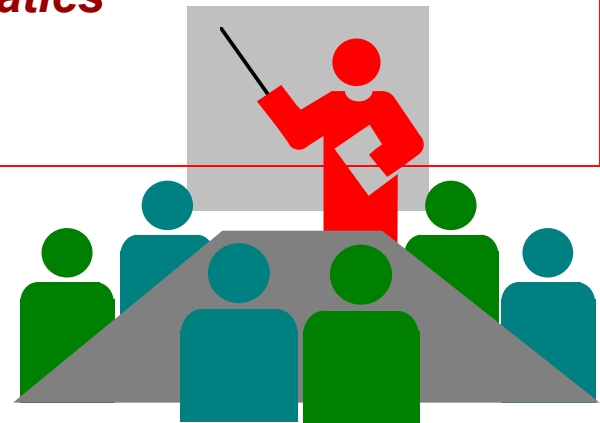
# International Organisation for Standardisation



The technical work is carried out, today, by 200 Technical Committees covering all fields with the exception of electrical and electronic engineering.

We have particular interest in the work of the following TC:

- ***TC 10 Technical drawings, product definition and related documentation***
- ***TC 46 Information and Documentation;***
- ***TC 145 Graphic symbols.***
- ***TC 211 Geographic Information Systems and Geomatics***



# International Organisation for Standardisation



## ***TC 10, Technical drawings, product definition and related documentation.***

Scope: “Standardization and coordination of all kinds of product documentation, including technical drawings, manually produced or computer based for technical purposes throughout the product life cycle, to facilitate preparation, management, storage, retrieval, reproduction, exchange and use; including media and drawing equipment”..



# International Organisation for Standardisation



## **TC 46, *Information and Documentation*;**

Scope “Standardization of practices relating to libraries, documentation and information centres, indexing and abstracting services, archives, information science and publishing”.

## **TC 145, *Graphic symbols*.**

Scope: “Standardization in the field of graphical symbols as well as of colours and shapes, whenever these elements form part of the message that a symbol is intended to convey, e.g. a safety sign. Establishing principles for preparation, coordination and application of graphical symbols. General responsibility for the review and the coordination of those already existing, those under study, and those to be established. The standardization of new graphical symbols, when requested by a technical committee, or where it does not fall within the activity of an existing technical committee.

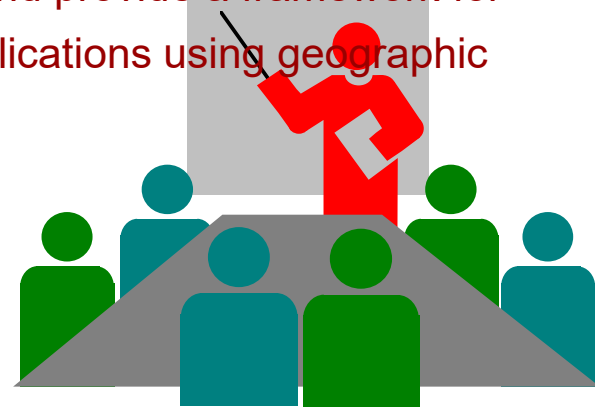


# International Organisation for Standardisation



## ***TC 211, Geographic Information Systems and Geomatics***

Scope: Standardization in the field of digital geographic information. This work aims to establish a structured set of standards for information concerning objects or phenomena that are directly or indirectly associated with a location relative to the Earth. These standards may specify, for geographic information, methods, tools and services for data management (including definition and description), acquiring, processing, analyzing, accessing, presenting and transferring such data in digital / electronic form between different users, systems and locations. The work shall link to appropriate standards for information technology and data where possible, and provide a framework for the development of sector-specific applications using geographic data.



# Standardisation

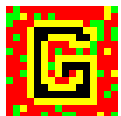


In Italy the standardisation and unification activities are covered by the Technical Commission *Beni Culturali - NorMal* (Normativa Materiali Lapidei).

The objective of the NorMaL Commission is to establish standard methods for the **study** of the alteration of natural stone, stuccoes and mortars, and for the **control** of the efficacy of the conservation treatments used on cultural objects.

Of the various commissions there are two which are of particular interest to us here:

***Drawings methods (GL9)***  
***Documentation methods (GL10)***





# Standardisation

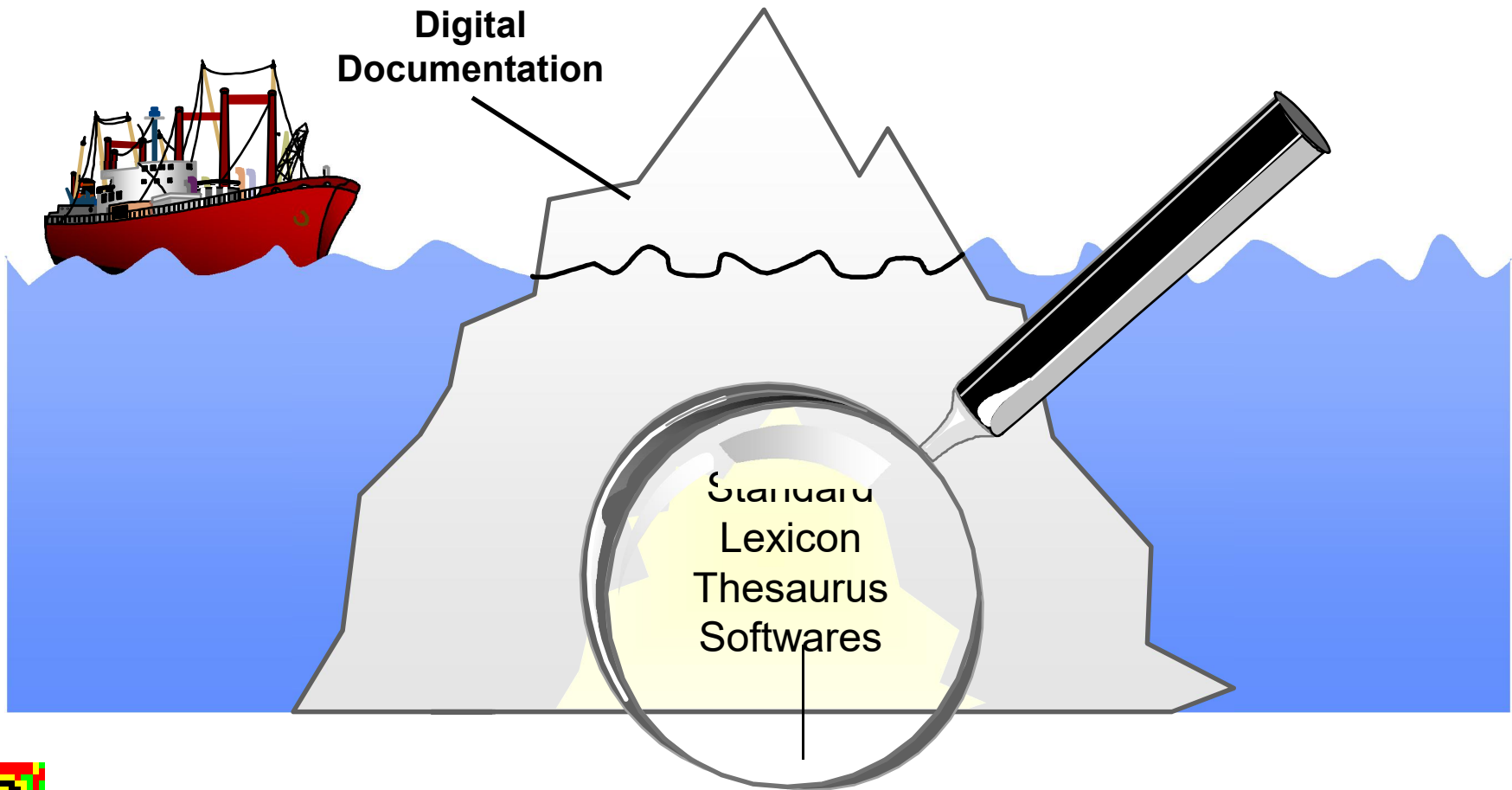


*Drawings methods (GL9)*  
*Documentation methods (GL10)*

The purpose of the Commission could be the cultivation of a standard which allows for the free flow of graphic and non graphic information through the computer systems in use.

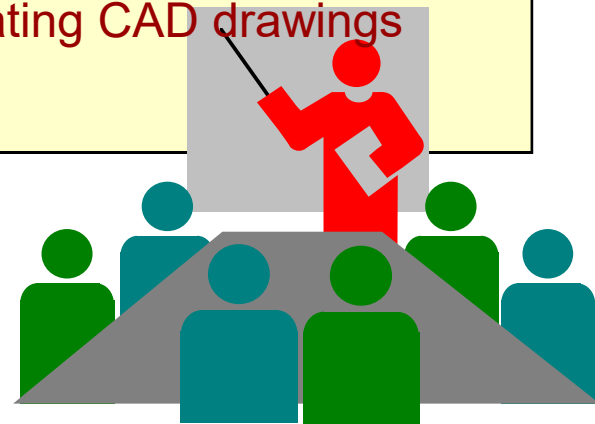


# Is documentation only a drawing?



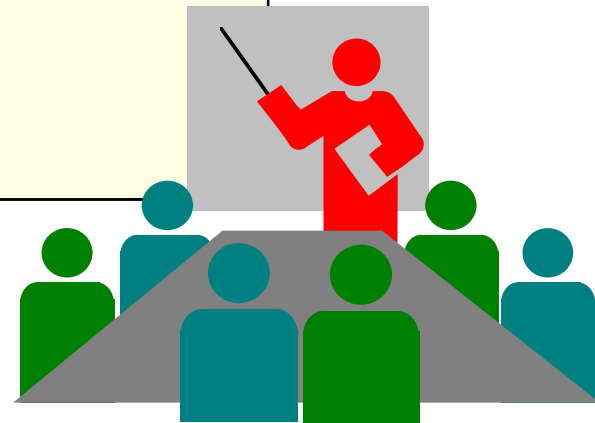
# Critical points

- **Technical tools**
  - Customisation and simplification the software user interface
- **Technician training**
  - Formation of experts in documentation for conservation
- **Standards development and dissemination**
  - Graphic compilation of documentation following predefined rules or standards or raccomandations that can be easily accessible (via Web).
- **Exchange of data**
  - Web browser accessories for viewing and navigating CAD drawings





**Standards are documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics, to ensure that materials, products, processes and services are suitable for their purpose.**





# Standardisation

- offer a model that sets criteria for content and quality and guarantees the recording of basic information;
- facilitate the exchanging and sharing of information;
- improve communication
- facilitate comparison and cross-referencing
- aid in formulating a system of information managements providing basis for effective computerisation



**Documentazione  
informatica e applicazioni**

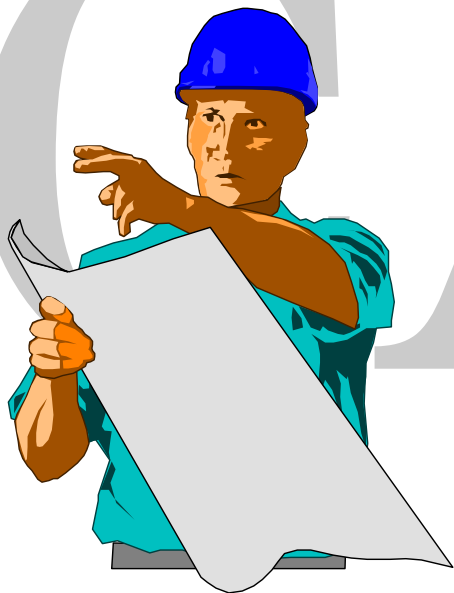


**MODELLO AZ  
IONESUPER  
FICIALE E  
SOLIDA**

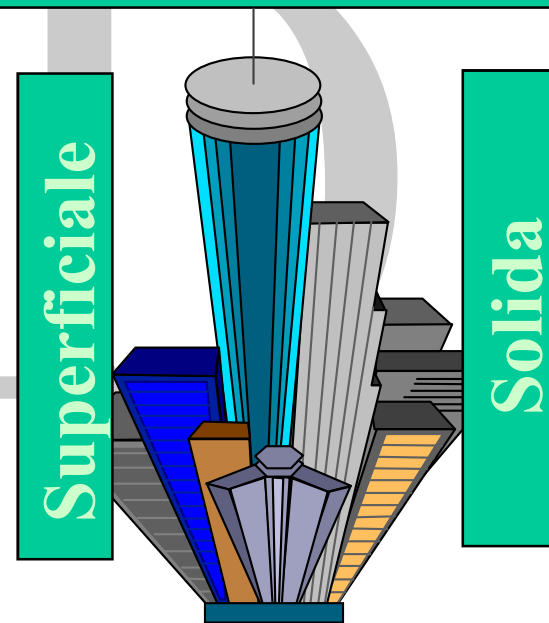
# Computer Aided Design

## Modellazione

Bidimensionale



Tridimensionale



Domestica documentazione  
informatica e digitalizzazione



MODELLO AZ  
IONE PER  
FICIALE

**ESEMPI**

# Comacchio. Nave Romana di Valle Ponti

*Il disegno assistito da tecniche informatiche come strumento di controllo e verifica nella progettazione*

*Direzione dei lavori:*

*Fede Berti (sbae) & Costantino Meucci (icr)*

*Rilievo:*

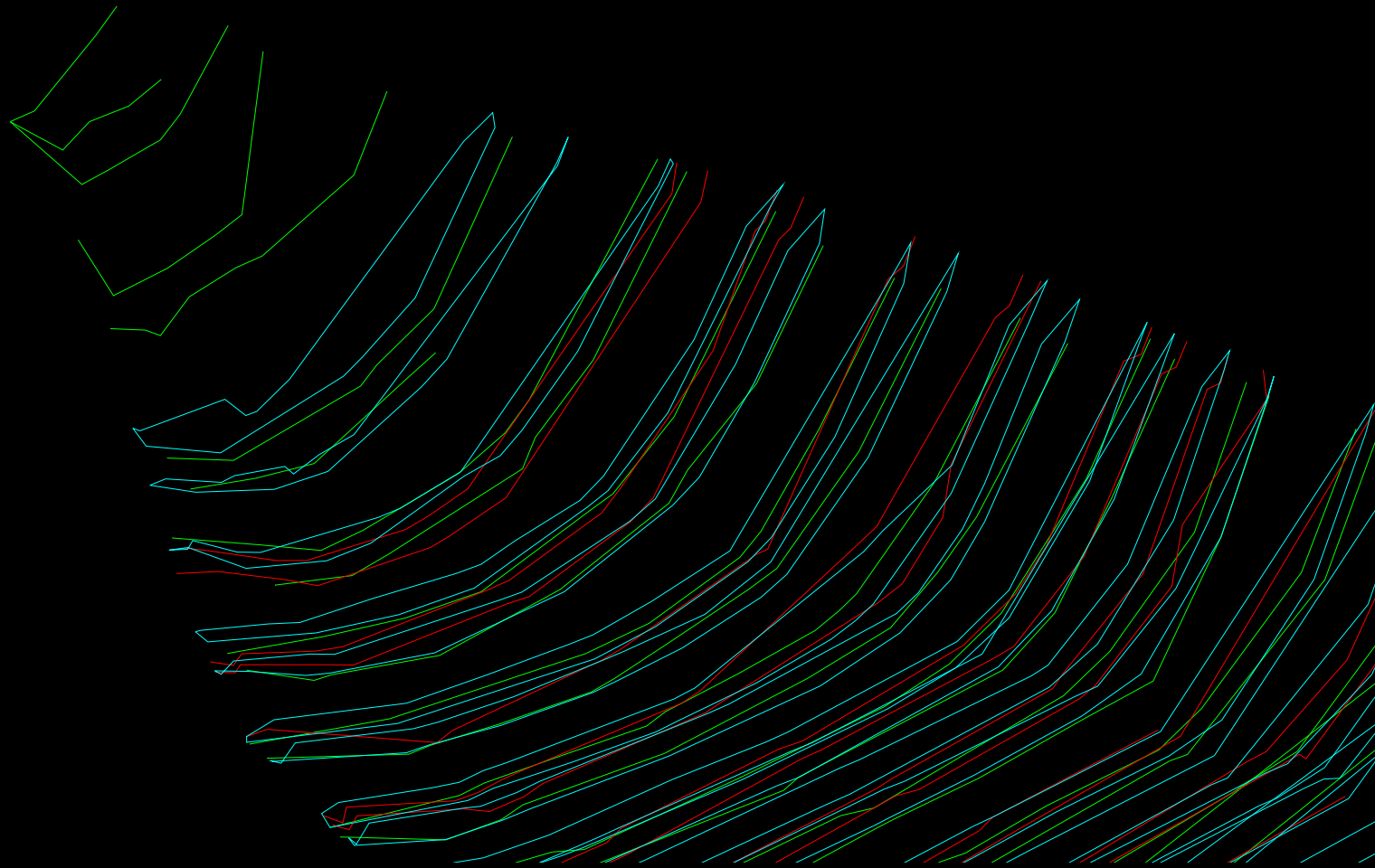
*Studio Tecnico Massimo Sabatini*

*Elaborazione CAD:*

*Giancarlo Buzzanca (icr)*

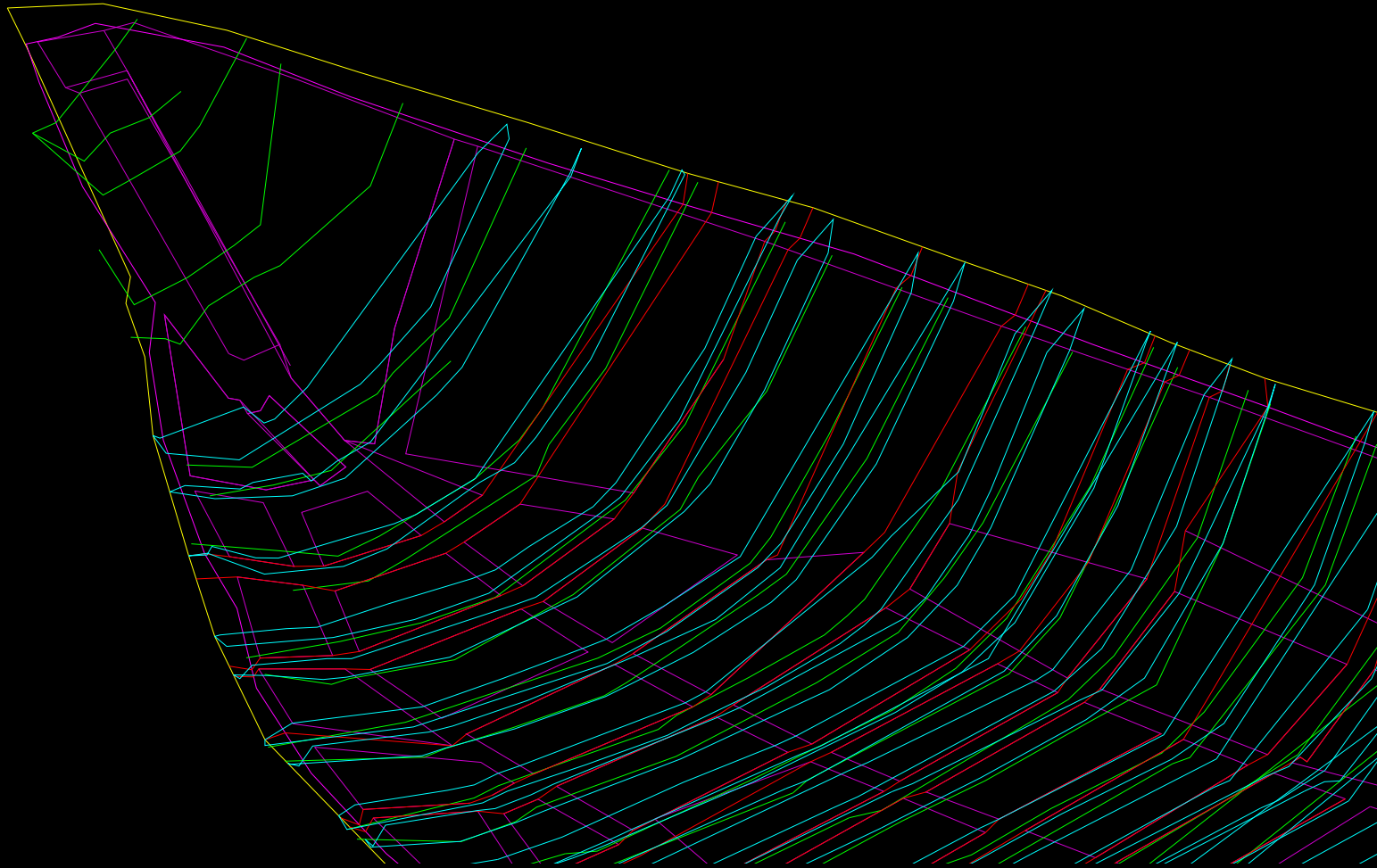


# la nave di comacchio

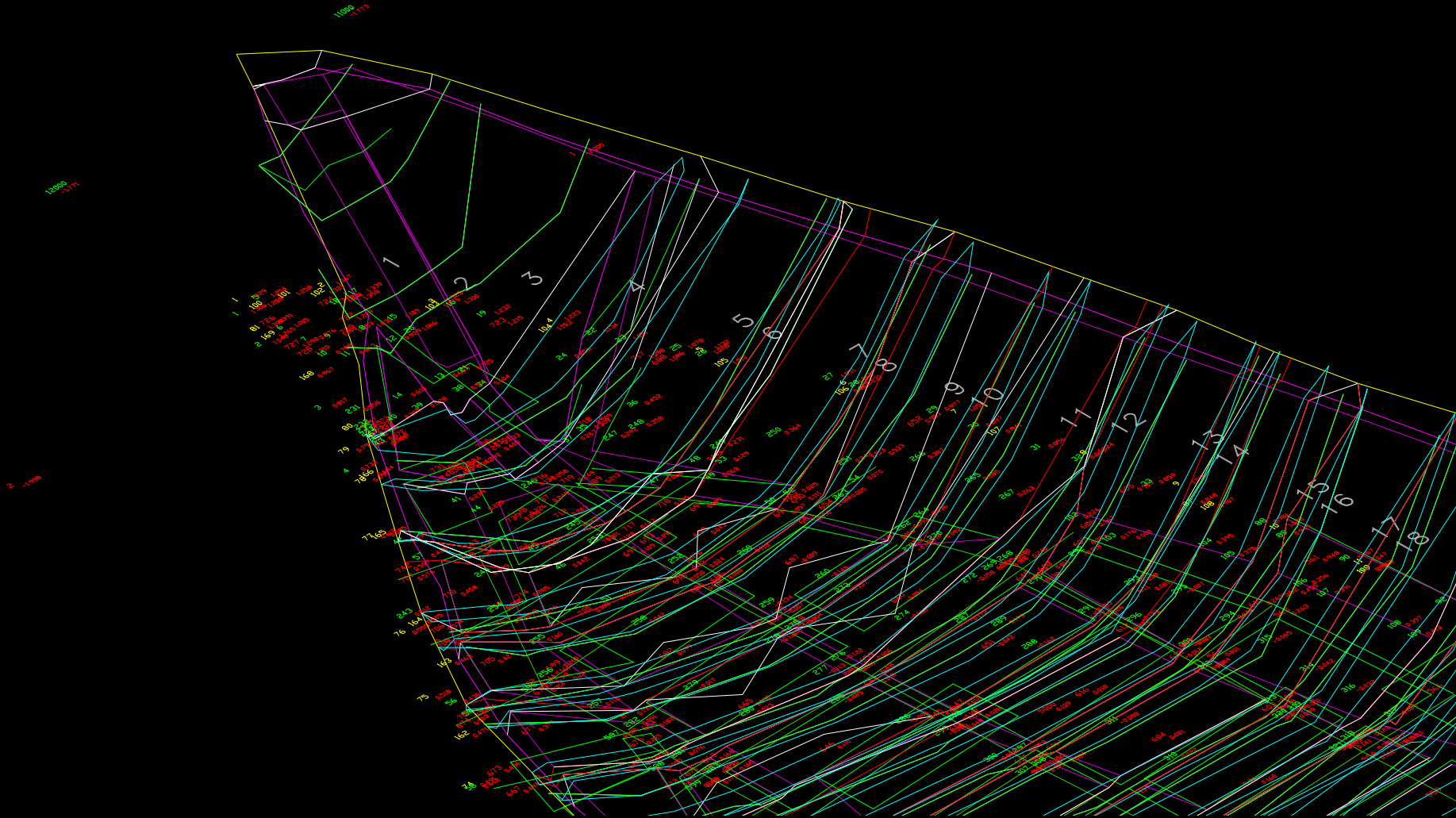




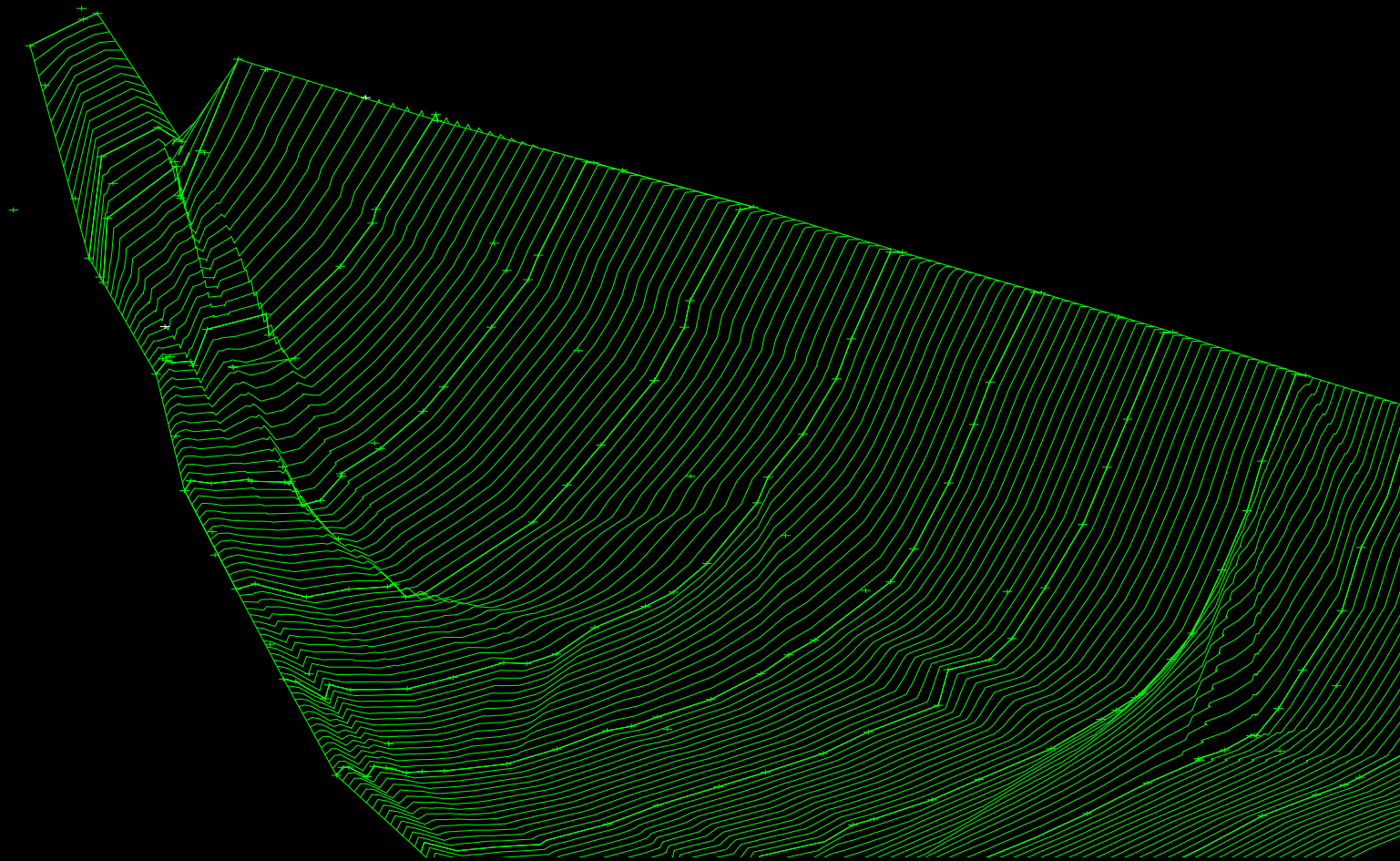
# la nave di comacchio



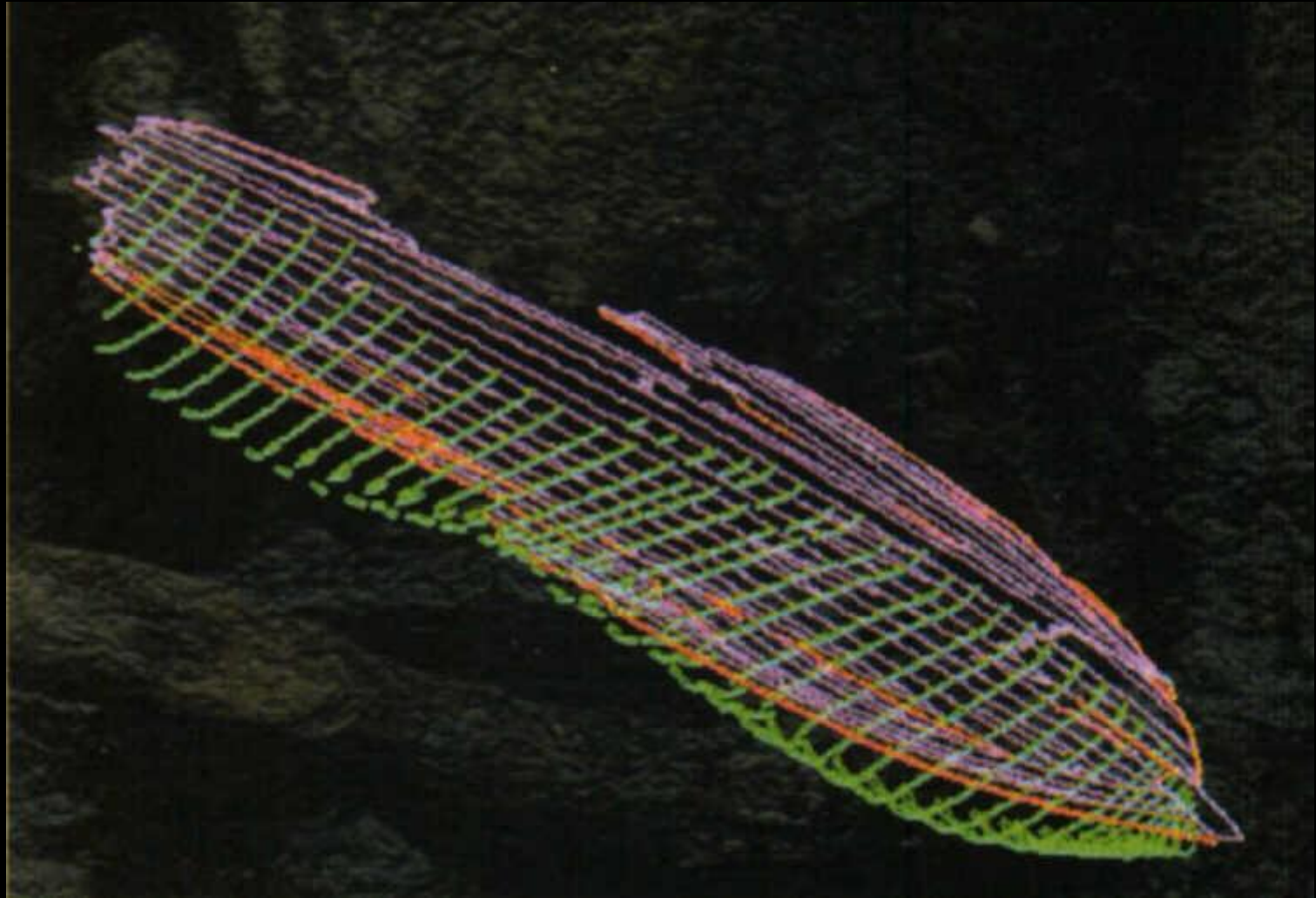
# la nave di comacchio



# la nave di comacchio



# *Presentationi*

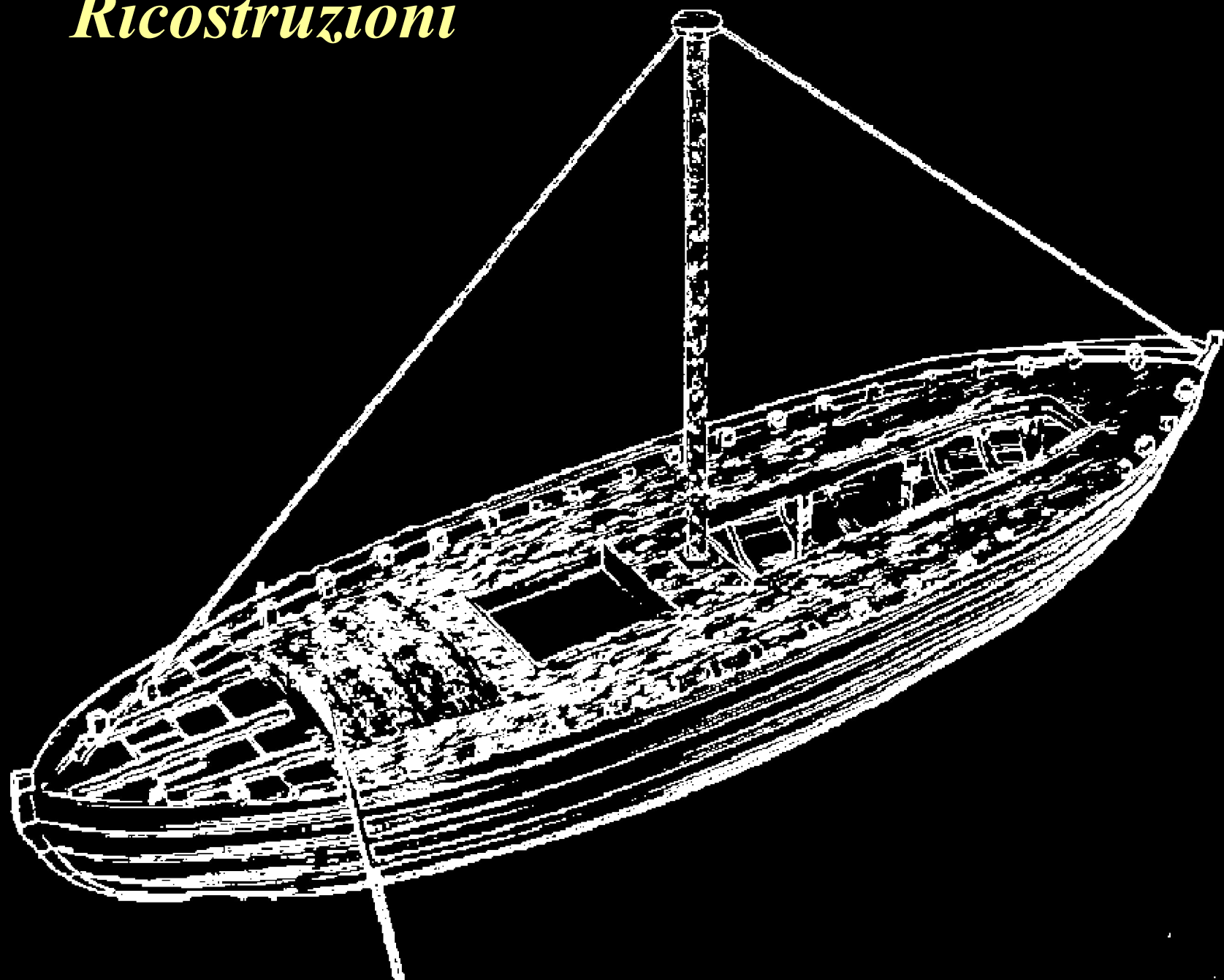


# *3D realtà virtuale*





# *Ricostruzioni*



Documentazione  
informazzazione



MODELLI  
AZIENDALI  
**ESEMPLI**  
OLIDA

**Marsala. Lido Signorino**  
**Relitto Arabo Normanno “A”**

*Il disegno assistito da tecniche  
informatiche nella restituzione grafica  
di relitti di imbarcazioni antiche*

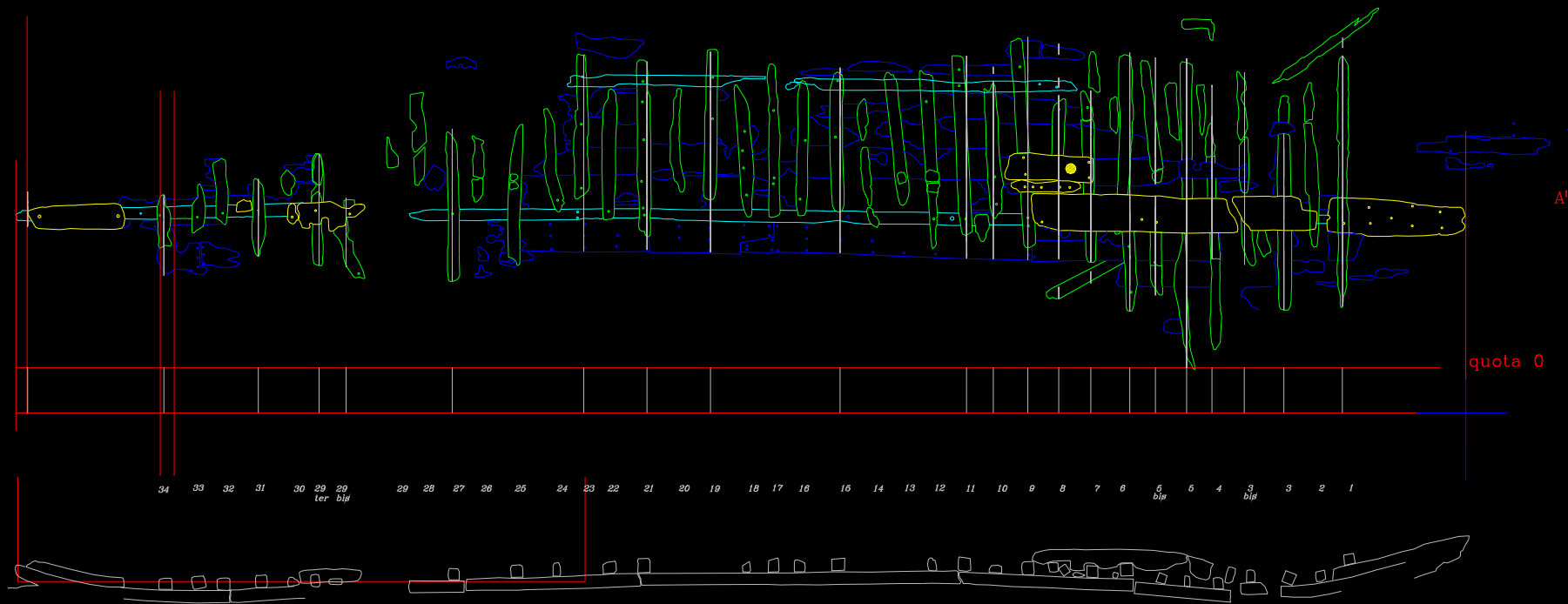
*Direzione dei lavori: Costantino Meucci*

*Rilievo: Cooperativa Acquarius*

*Restituzione: Angela Maria Ferroni*

*Elaborazione CAD: Giancarlo Buzzanca*



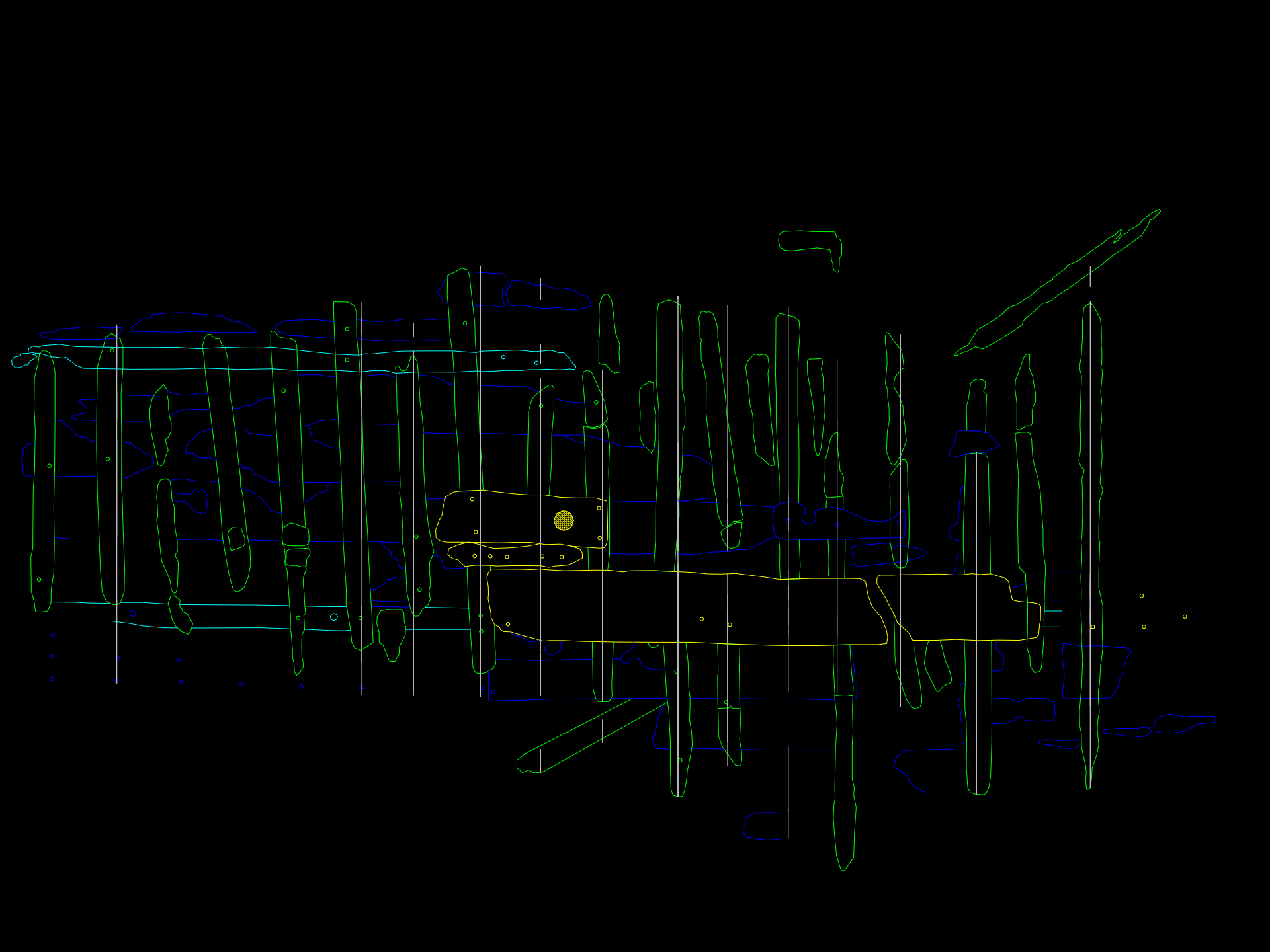


ATTENZIONE:  
TUTTO IL DISEGNO DELLA PIANTA  
E' RUOTATO RISPETTO ALL'ORIGINALE  
SCANSIONATO

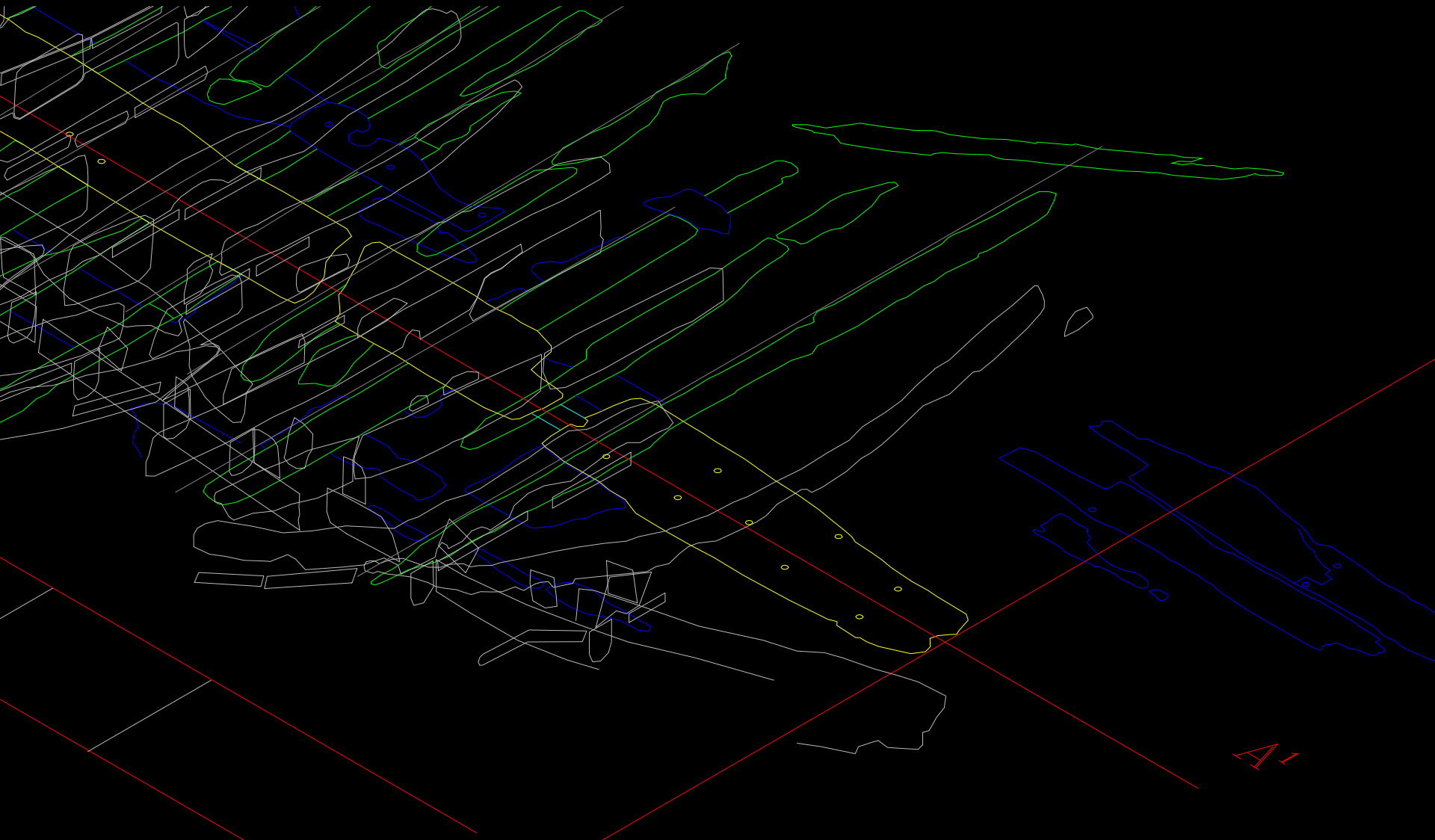
MARSALA - LIDO SIGNORINO  
RELITTO A

scala 1:20

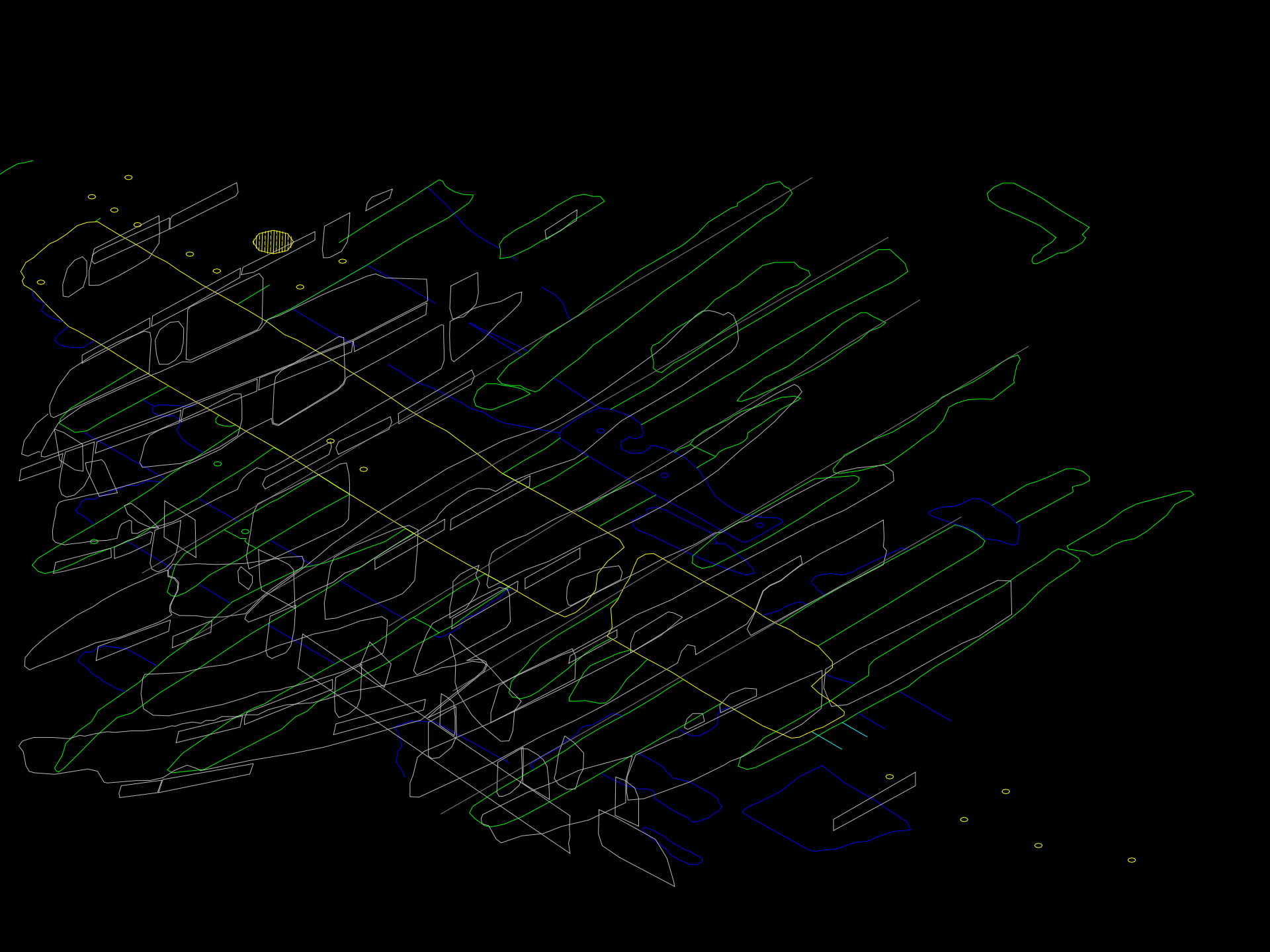
ril.:coop. Aquarius - dis.:A.M. Ferroni (I.C.R.)  
rest.: G. Buzzanca (I.C.R.)



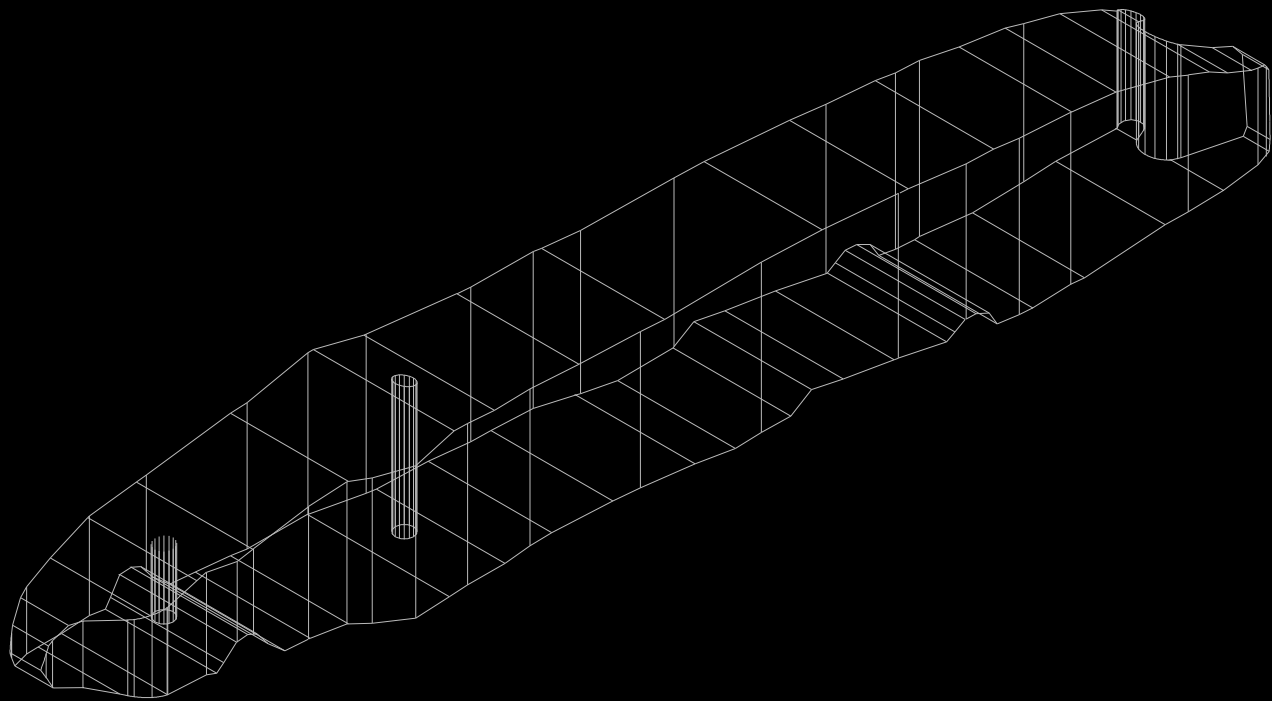


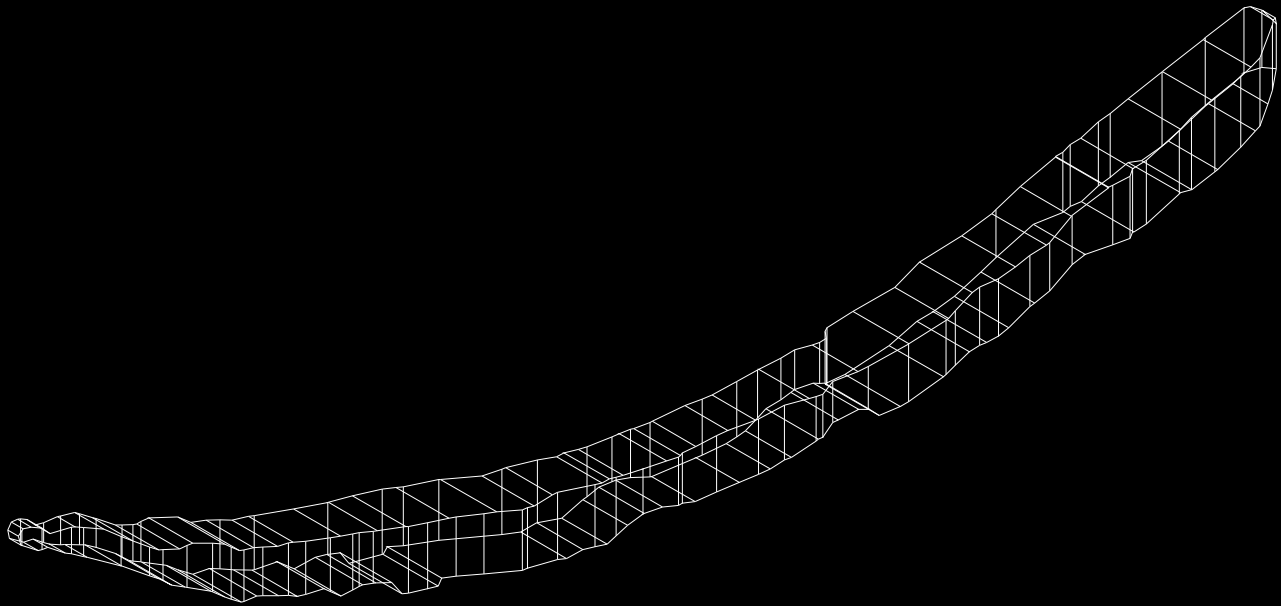


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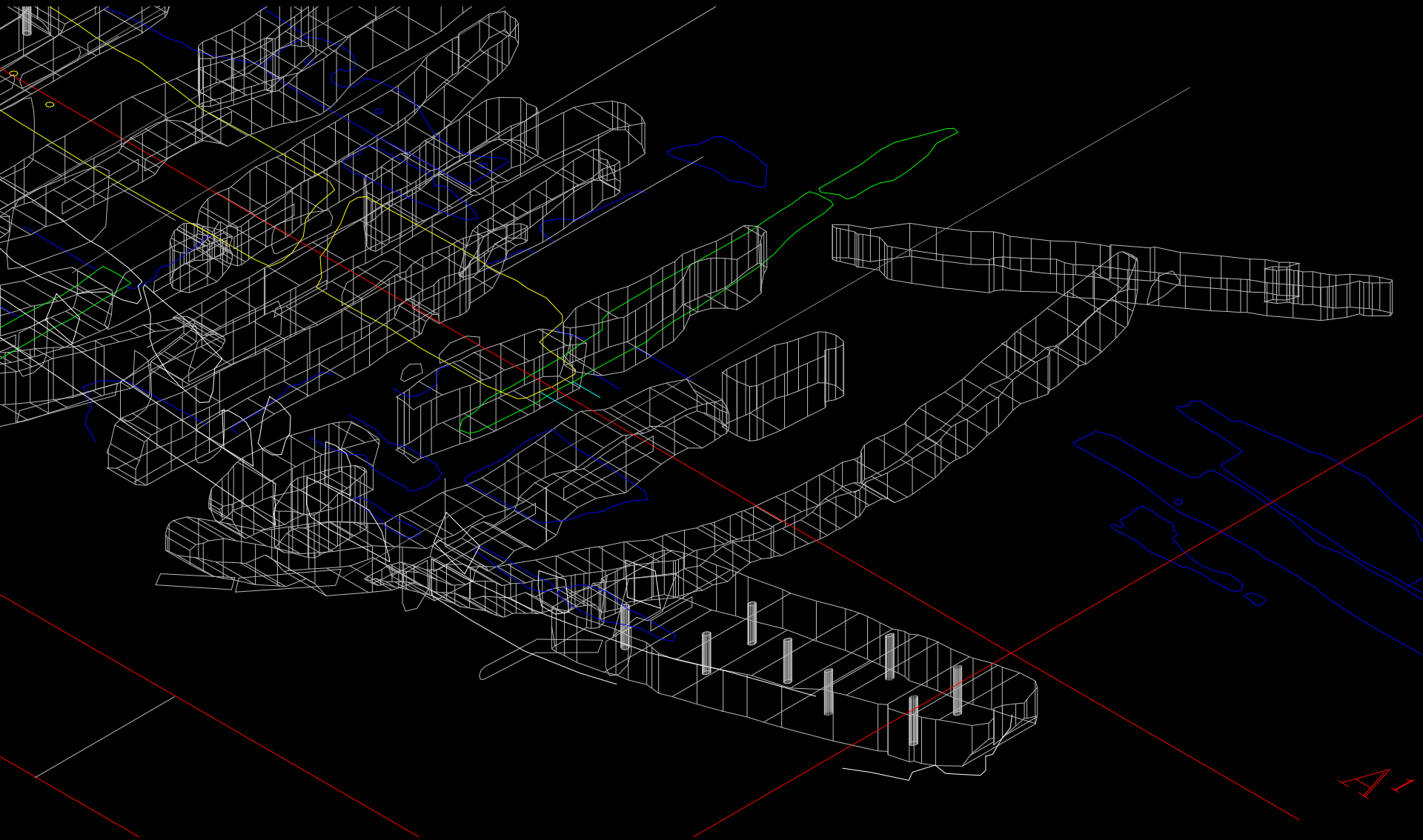


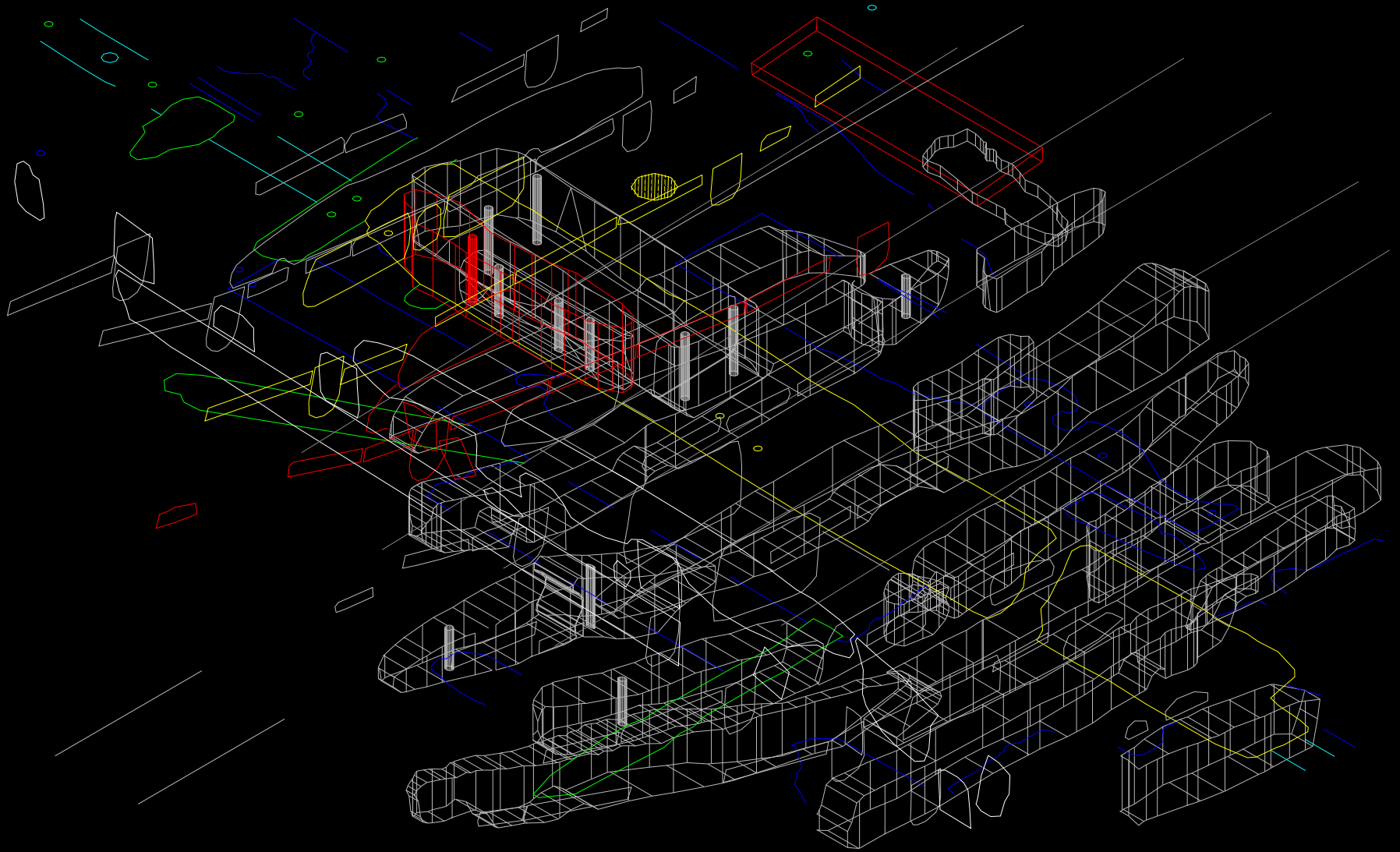


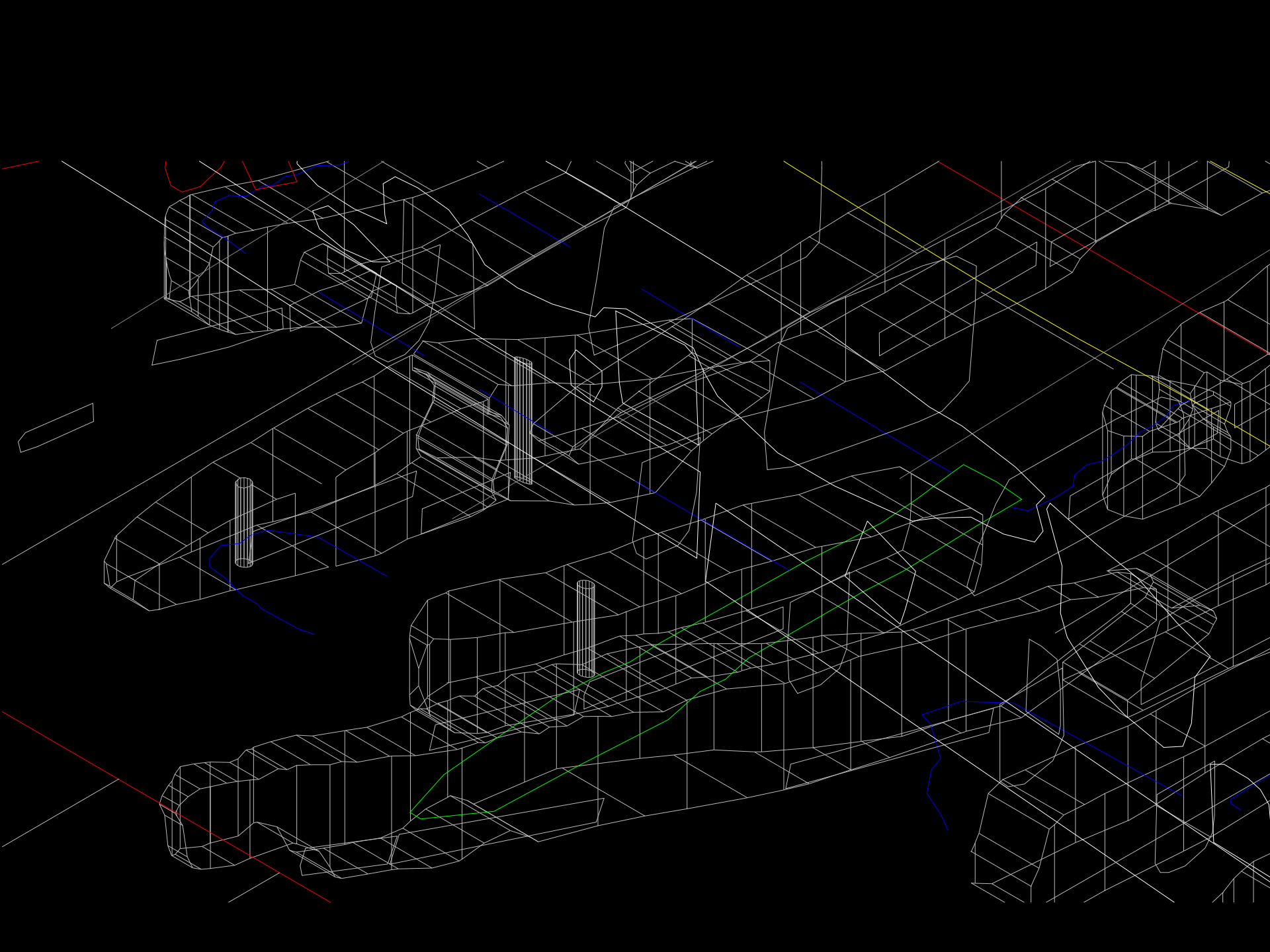


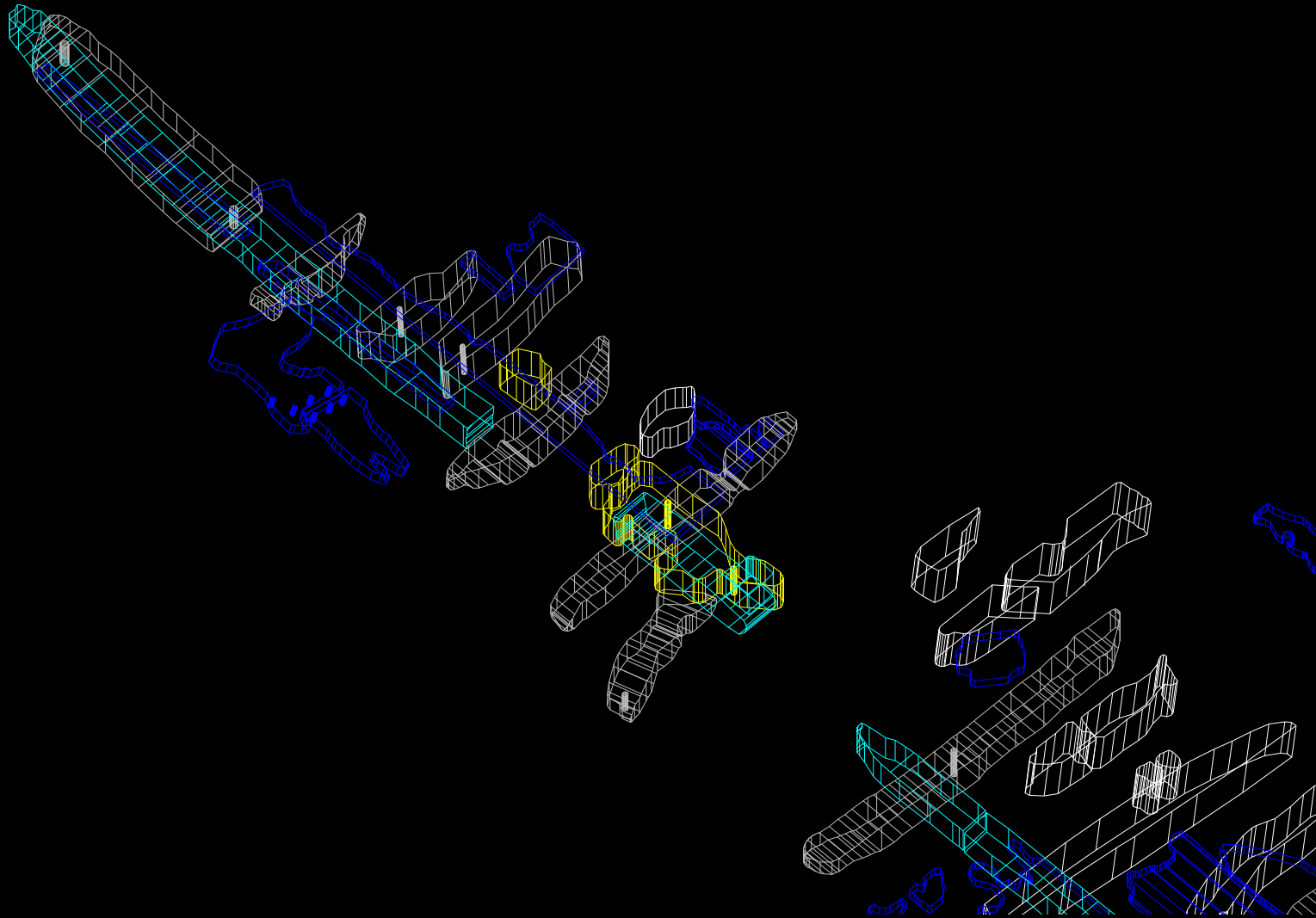


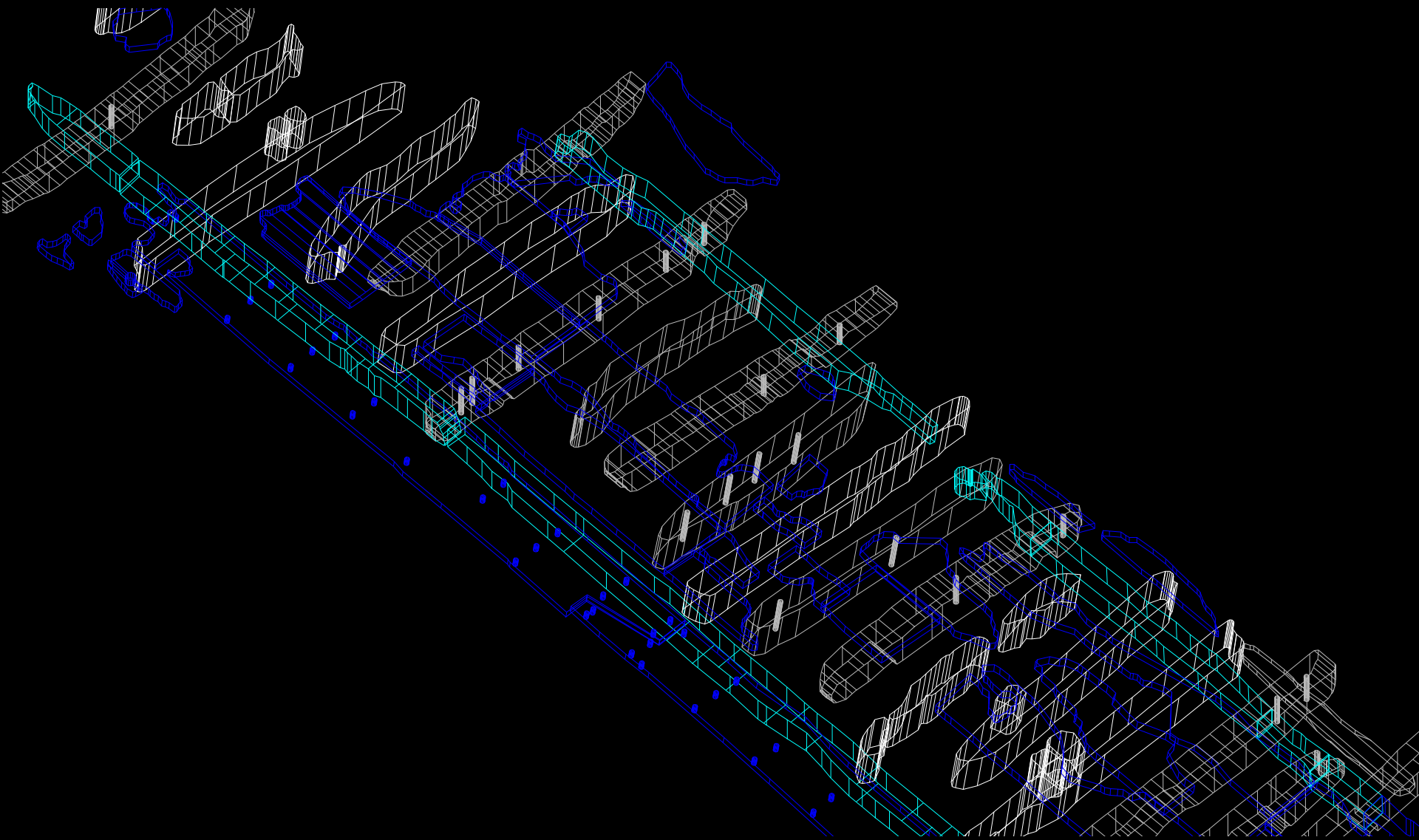


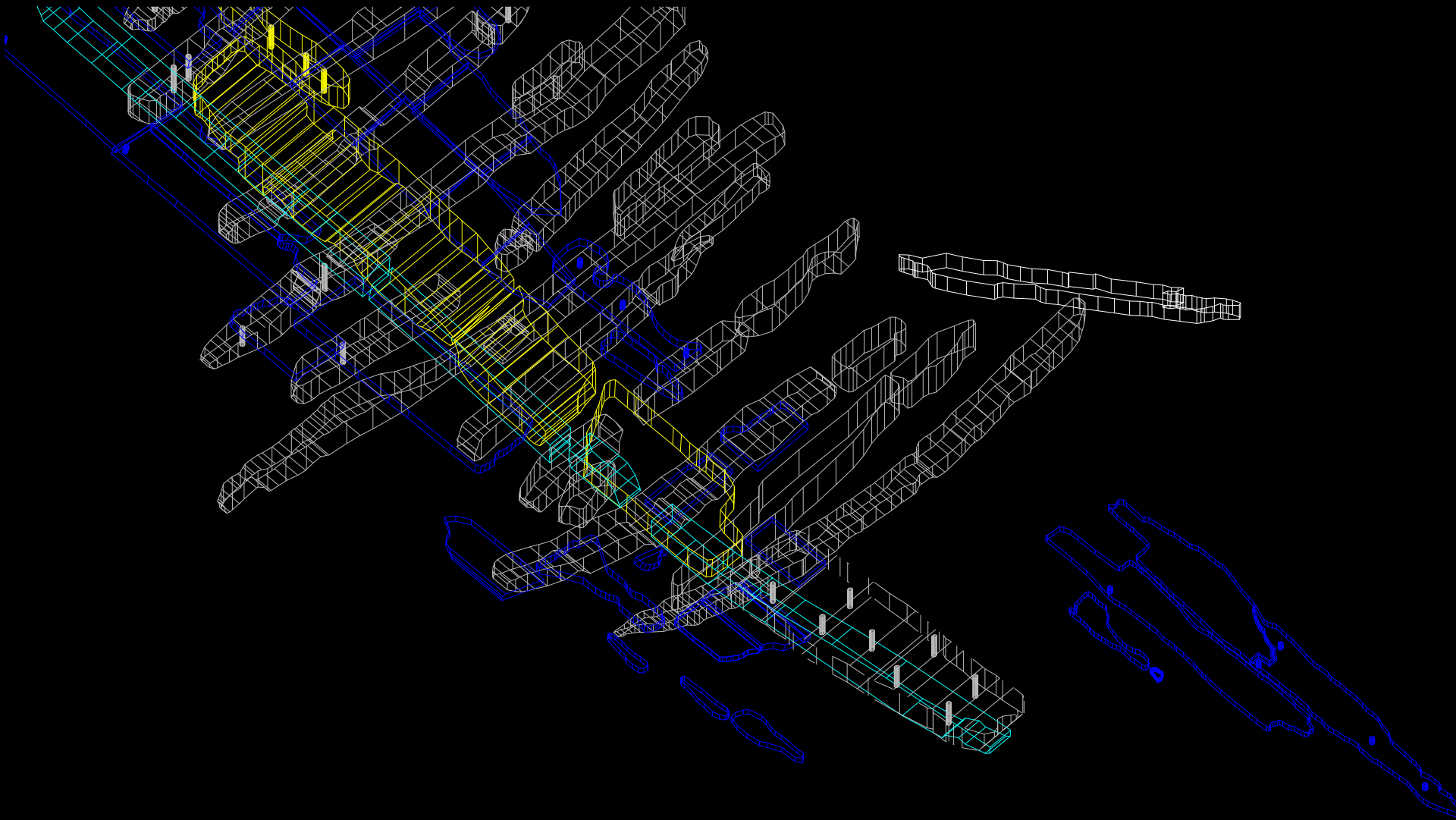














# Reconstructing the Theater of Dionysus in Athens.

How the images were created

[tda\\_how.htm](#)

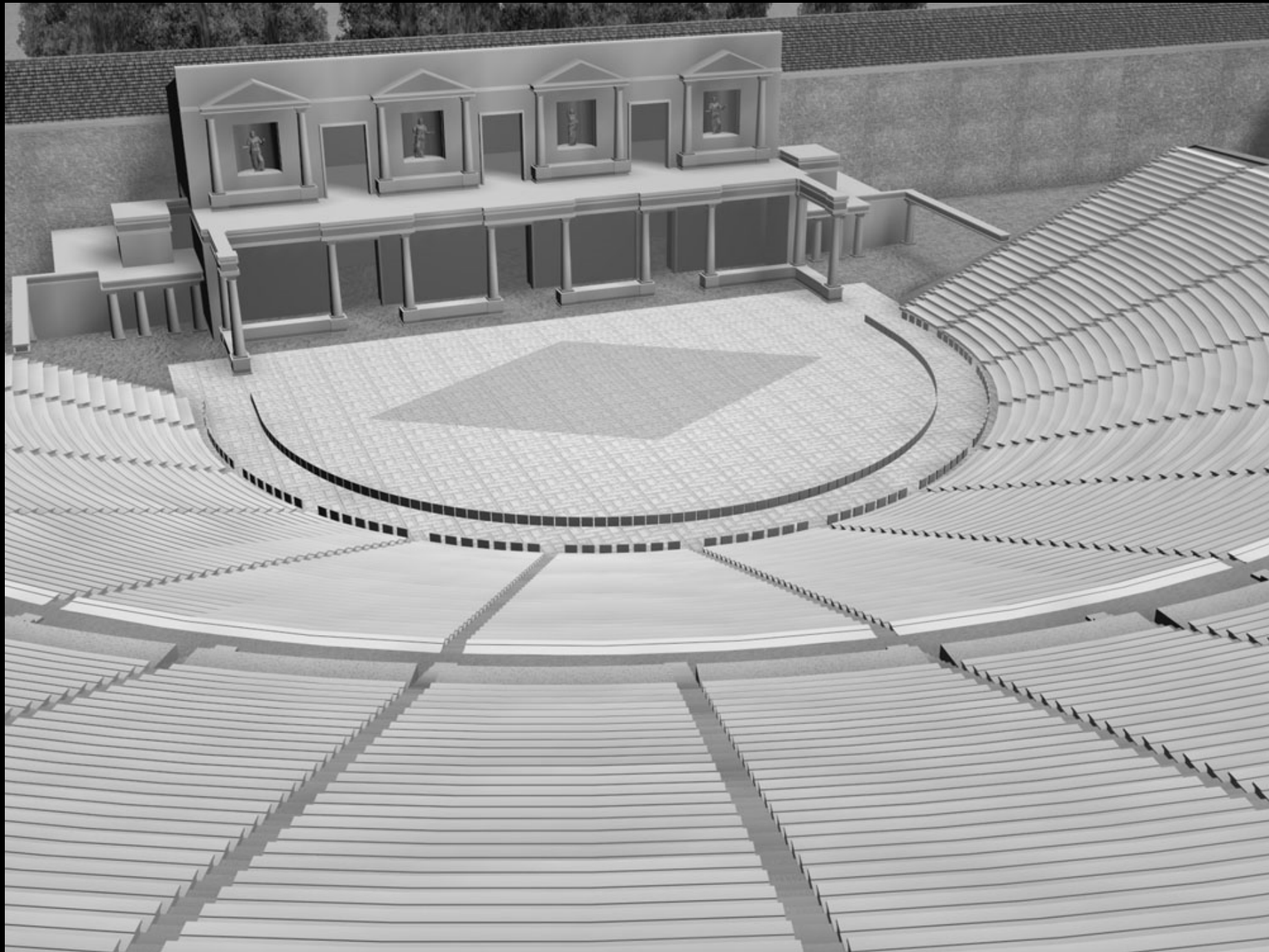
A 3D reconstruction of the Theater of Dionysus in Athens, showing the semi-circular seating area and the stage building. The image is rendered in a low-resolution, pixelated style with a color palette of yellow, green, and grey. The text 'tda\_how.htm' is overlaid on the image in a white, sans-serif font.

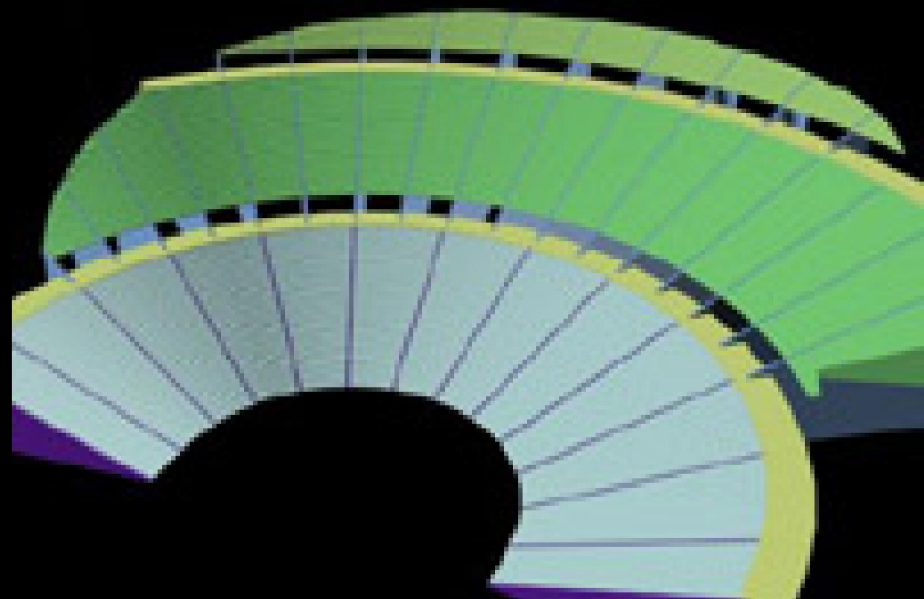
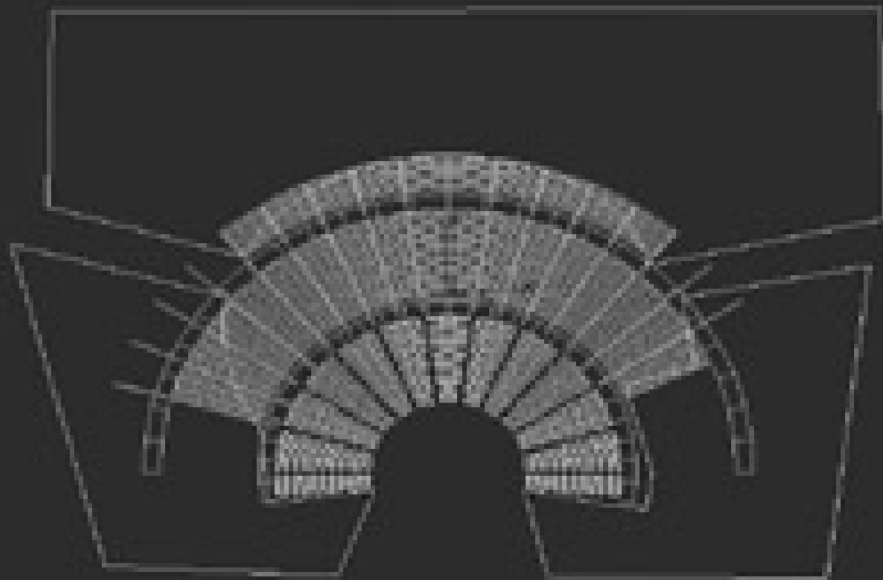
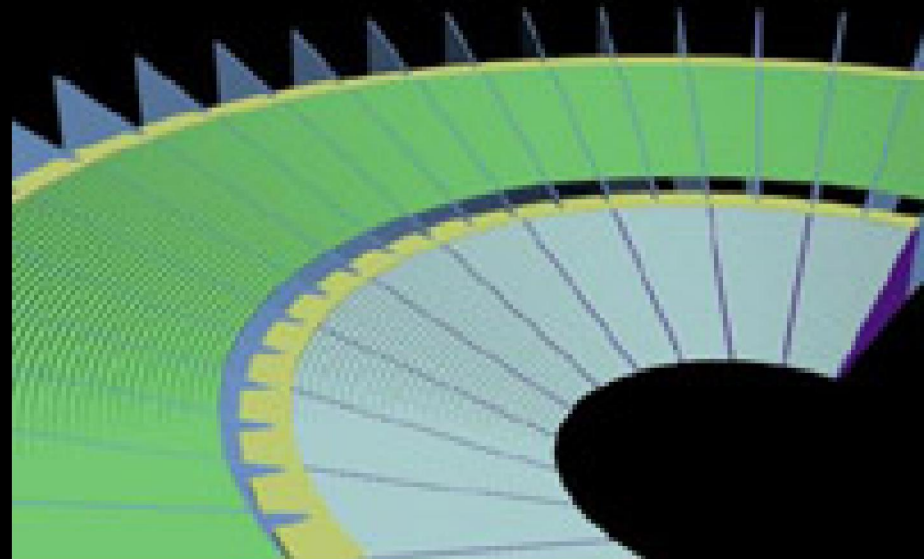
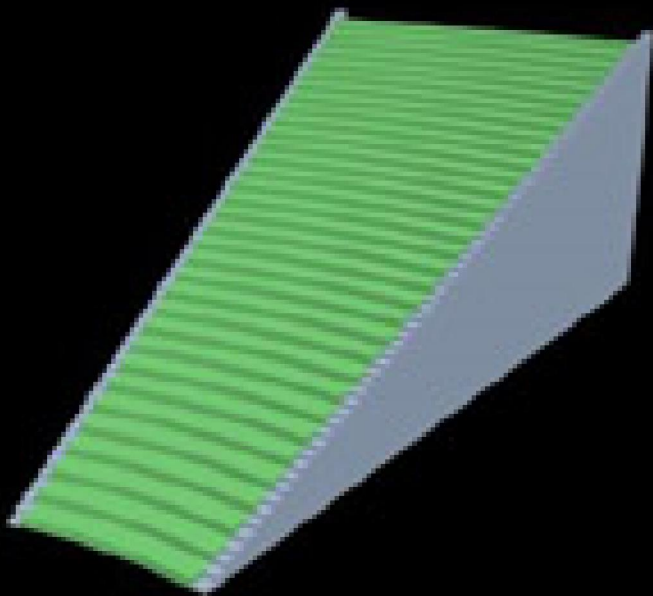
# Reconstructing the Theater of Dionysus in Athens.

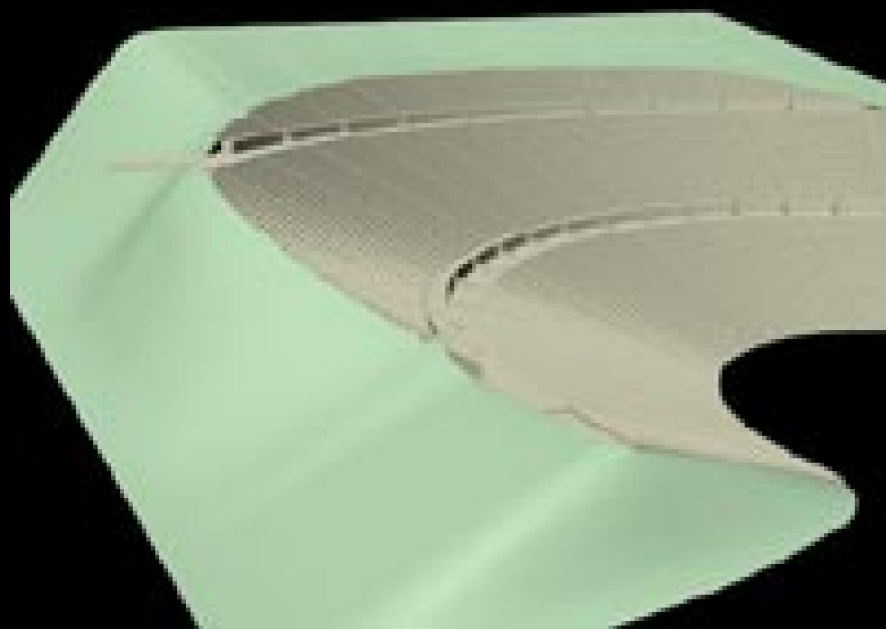
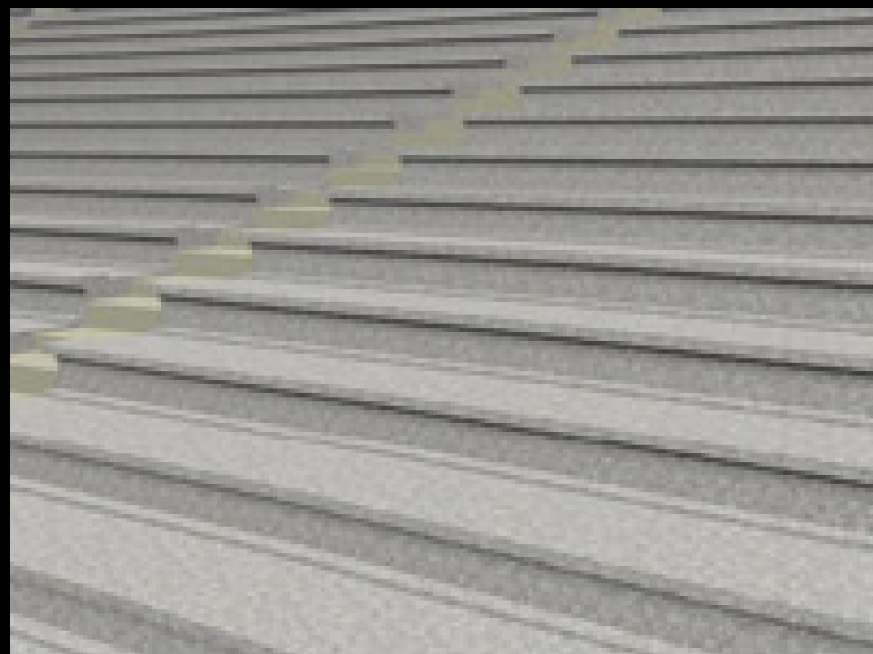
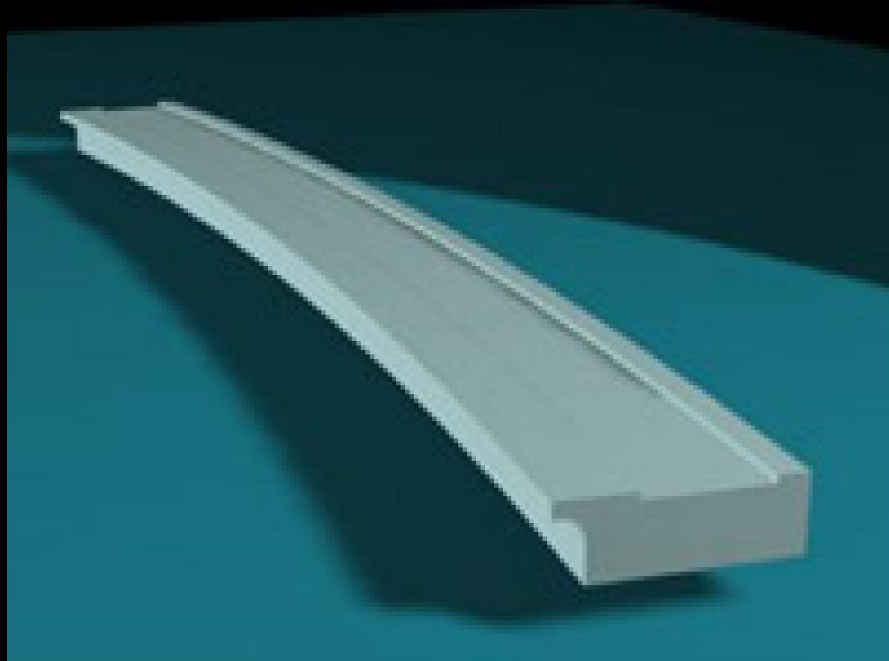


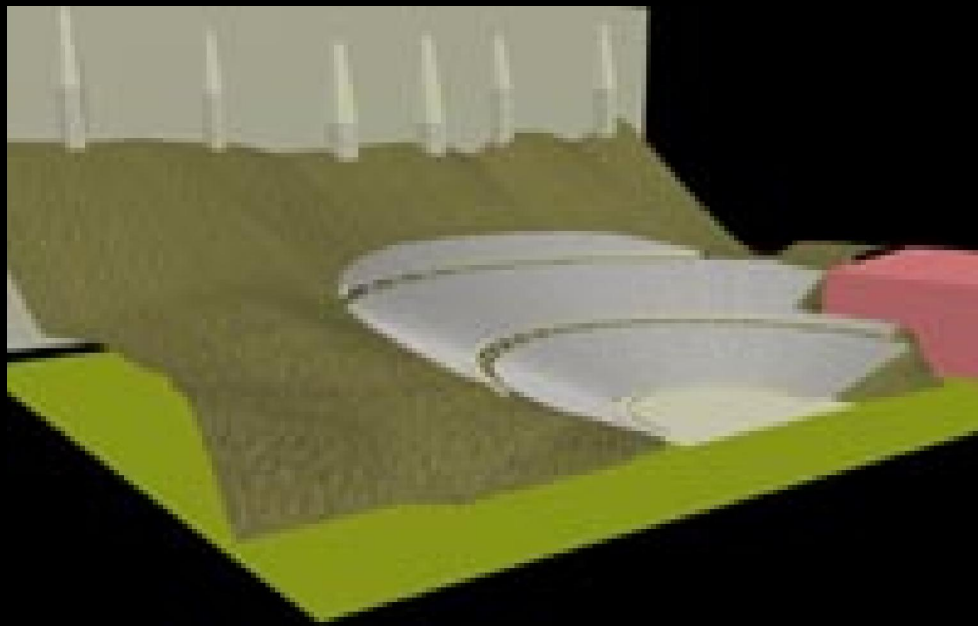
total.jpg  
Sallie Goetsch  
Stefan Didak











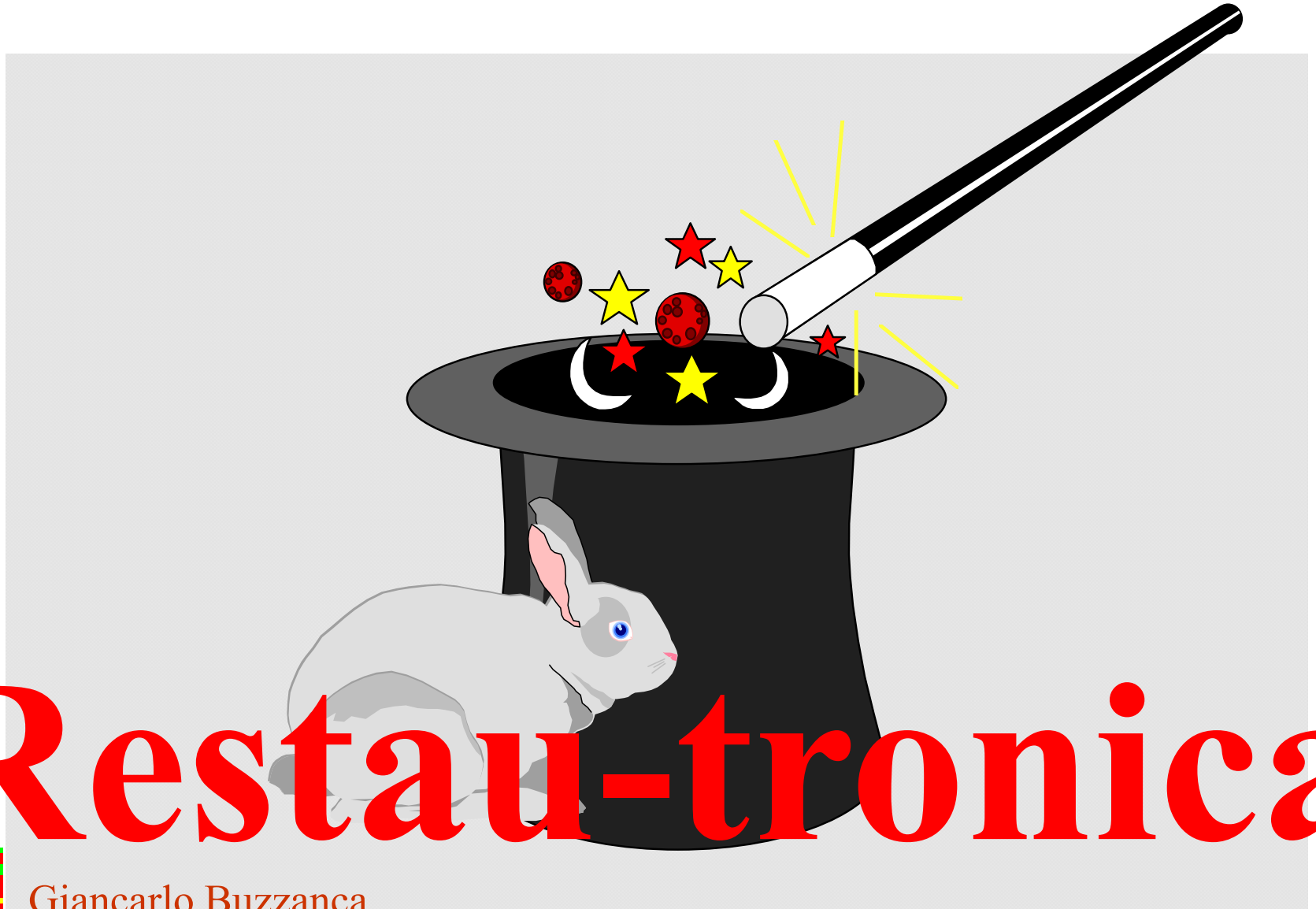
# Reconstructing the Theater of Dionysus in Athens.



[tda2.jpg](#)  
Sallie Goetsch  
Stefan Didak



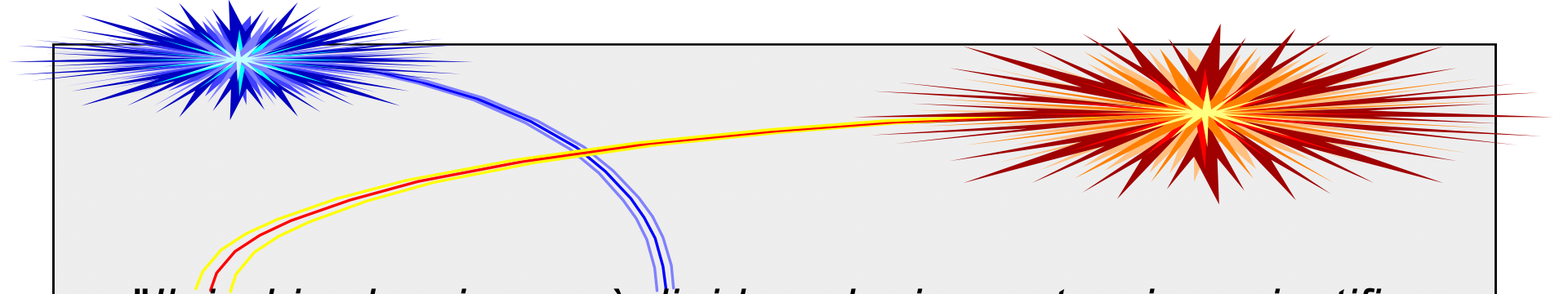
Restau-tronica ... ??????????????



Restau-tronica

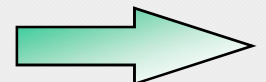


Giancarlo Buzzanca



• *"Il rischio che si corre è di ridurre la ricerca tecnico-scientifica applicata al patrimonio artistico e culturale (...) ad un sovrabbondante e tautologico orpello, in cui l'ovvio e lo scontato godono di una inutile e costosa spettacolarizzazione, per niente significativa per la ricerca storico- critica, come pure per la migliore conoscenza degli aspetti e dei processi di deterioramento"*  
[CORDARO M. 1991].

• *"si tende ad usare, nel migliore dei casi, le nuove tecnologie in modo edonistico, in una sorta di ludismo tecnologico"*  
[MASIERO R., 1988].



*Rest*

- *Il panorama tecnologico cambia molto rapidamente ed i costi si abbattano in maniera precipitosa.*

*au-*

- *Le nuove possibilità tecnologiche potranno entrare in uso comune molto rapidamente.*

*tron*

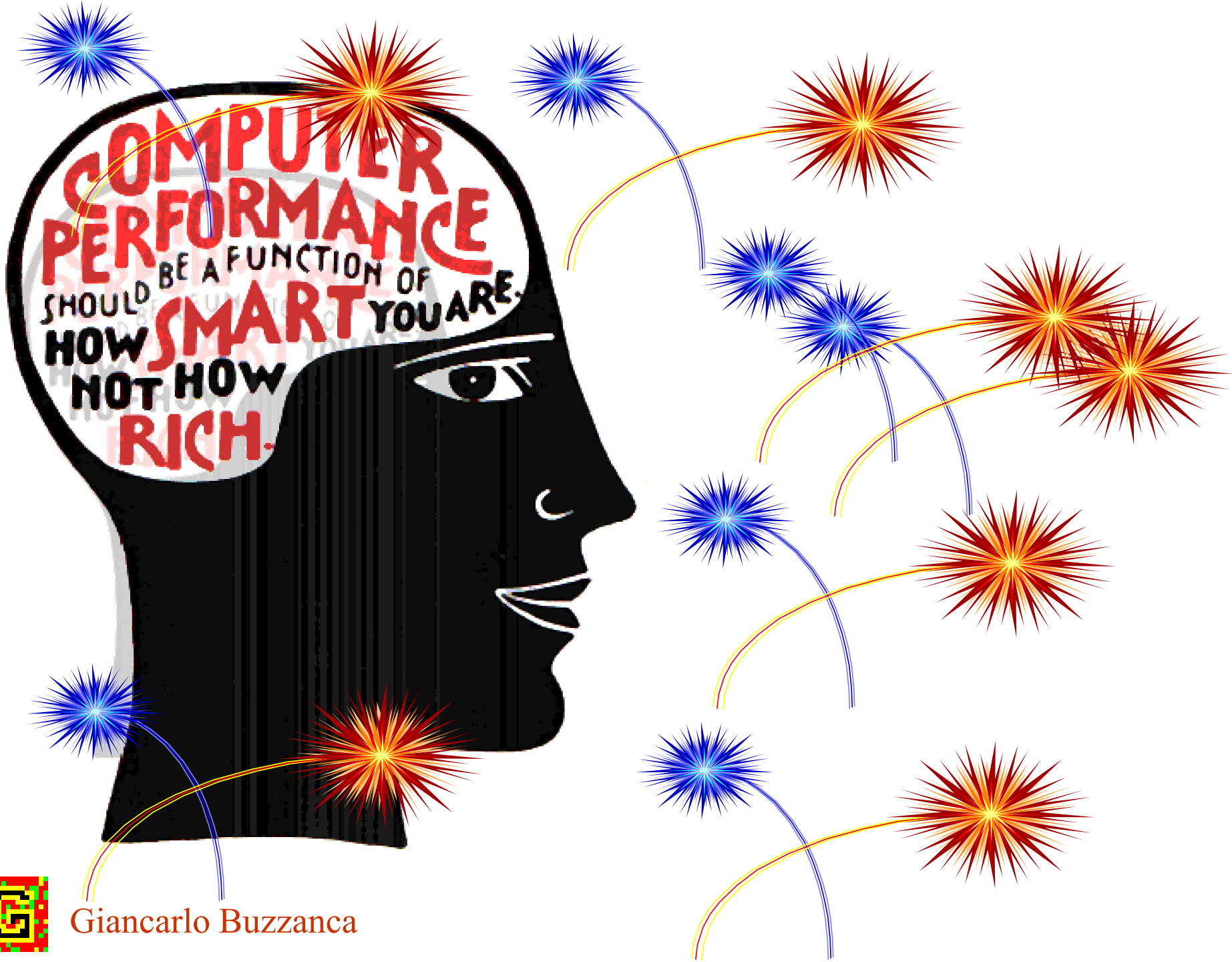
- *Il nostro lavoro in questo campo è quello di demistificare gli strumenti di registrazione analitica e assistere la comunità dei professionisti della conservazione nel compiere scelte oculate nell'uso di queste risorse.*

*ica*

- **Margaret MAC LEAN, 1996**







**COMPUTER  
PERFORMANCE**  
SHOULD BE A FUNCTION OF  
**HOW SMART YOU ARE.**  
NOT HOW  
**RICH.**



Giancarlo Buzzanca