



LUMEN
CENTER
ITALIA

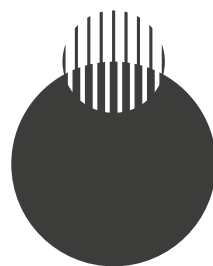
40
YEARS
OF LIGHT
1976 - 2016

luum®

NOVA LUX
AT AMBROSIANA

MBARO
BIBLIOTECA
PINACOTECA
ACCADEMIA





LUMEN
CENTER
ITALIA

40
YEARS
OF LIGHT

1976 - 2016

New division **luum**[®]
by LUMEN CENTER ITALIA lights up
the Veneranda Biblioteca Pinacoteca Ambrosiana



A VIBRANT
ATMOSPHERE
FULL OF PATHOS

Deep study
on the colors
of each work

PREFACE



What does not do the light! It brightens the surrounding and fills it up of shapes, where in the indistinct dark every difference is lost. Dark and panic are all one, and not only for children! Light and joy of life and moving in a comfortable and good tidy place go at the same speed.

The Pinacoteca Ambrosiana is living moments of intense emotion caused by a new illuminating system which enhances its artistic heritages, thanks to the generous interest of LUMEN CENTER ITALIA.

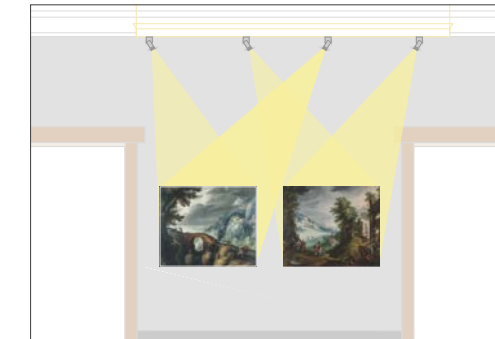
The natural light is the best per excellence like the sun one.

LUMEN CENTER ITALIA has caught for us the light of the sun, in order to allow us to show our masterpieces in the best possible conditions, in a way that a prolonged exposition to light could not damage the works delivered from centuries to our admiration. The visitor is involved in the exposed pictorial works, has the impression to see for the first time some rooms of the Pinacoteca Ambrosiana, discovering details and chromatic tones which, before of this intervention, were never observed. The spectrum of solar light reproduced by the new generation of LED applies an intense therapy on the art works, almost like a renovating intervention.

In this way the Pinacoteca Ambrosiana can offer to the world of art expositions an example of virtuous lighting.

Monsignor Franco Buzzi
Prefect of the Veneranda
Biblioteca Ambrosiana

THE LIGHTING PROJECT



A TREMBLE ATMOSPHERE FULL OF PATHOS

Deep study
on the colors
of each work

The lighting project performed for the Pinacoteca Ambrosiana has set up most clearly the masterpieces on display in it.

Lowering the level of general lighting, the use of projectors, lightining individually paintings and sculptures, delineating exactly the size, has meant that the works emerge from the walls, creating a 'vibrant atmosphere full of pathos. The contrast between the penumbra of the space and the vibrant shine of the chromatic masses of the paintings together with the 3D of the sculptures and the relief of the gold funds, has made the works re-emerging in all their magic.

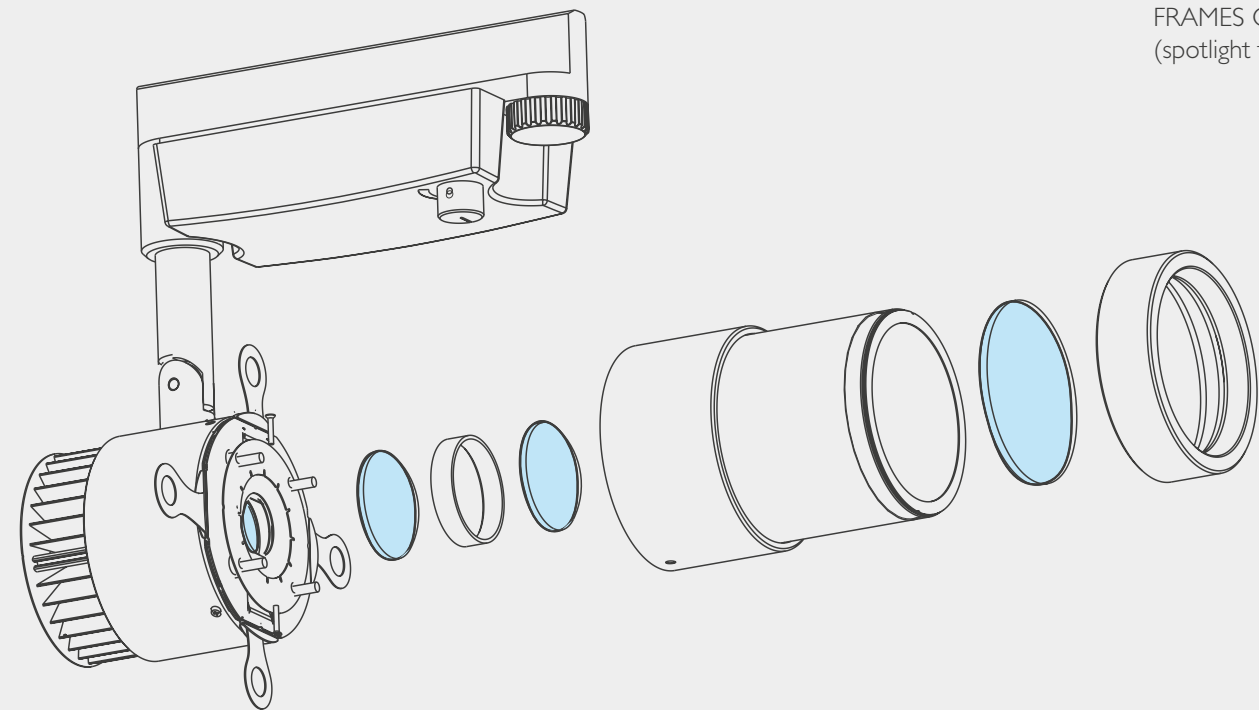
On each painting was conducted a thorough study of the color components, the meaning of the work, the "atmosphere" in it recreated at the pictorial level. Based on this study the lighting project has selected the most appropriate LED light sources, optics and lenses. The project has also defined the correct light incidence angles with the works and the color temperature degrees for each individual work.

In this way, in each work it was possible to capture smallest details, delicate nuances, shades and different color planes, invisible with the previous illumination.

The museum is now living in a completely new dimension, in which the observer is to talk in person with the true face of the works, grasping meanings, symbols and messages before illegible, almost as if the works had been restored.

Arch. Alessandro Colombini
Lighting Designer





FRAMES OF ANUB 24°
(spotlight track with 24° optic)



PRESERVE AND DIVULGE



A RENEWING PERCEPTION OF THE MASTERPIECES

Problems and challenges

Augusto Grillo

Presidente
LUMEN CENTER ITALIA CEO
luum® division

Allowing users to observe and enjoy the great masterpieces' smallest details, involve deep and extended cultural, scientific and technological knowledge. It cannot be the result of hurriedness.

Poor and incorrect lighting lead to a narrow view of the artworks, many times ruining and modifying artworks themselves.

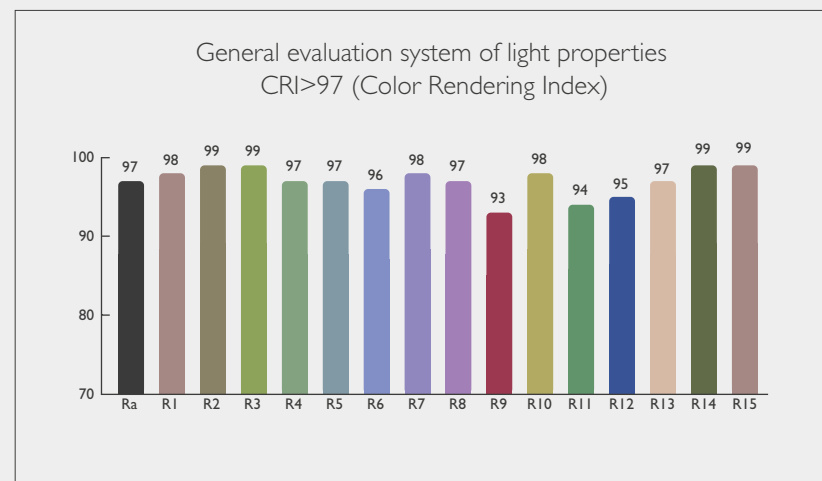
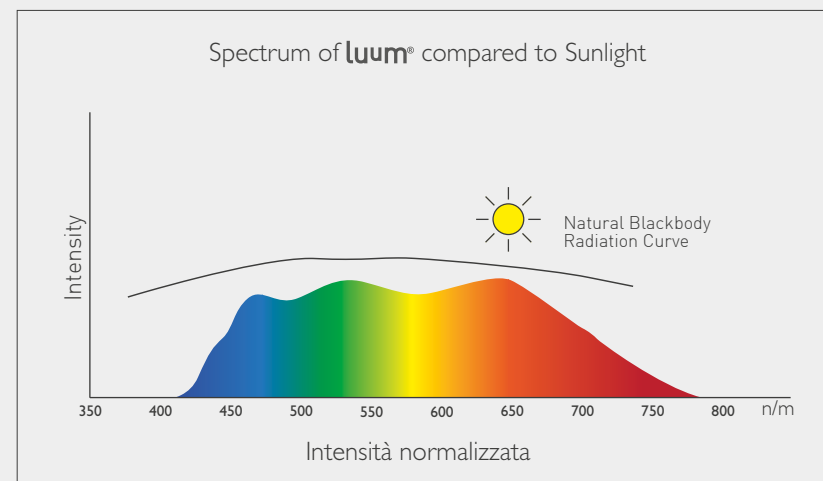
The Ambrosiana lighting project – edited by Arch. Alessandro Colombini and developed by LUMEN CENTER ITALIA by its new division **luum®**, has overcome many obstacles being able to adapt to limited spaces and old plants design. Light sources quality, the upper technology of lens and of electronics are a new advanced frontier in the sector of museums lighting systems. **luum®**, new LED conception, developed in

collaboration with the most advanced Japanese companies of the sector, generate a light emission with a spectrum very similar to sun. The clean, natural, without infrared and ultraviolet light, and especially without the peak of blue waves emitted by current LED which damage artworks, allow a perfect lightening. The high transparency degree of the lens and the quality of electronics, made a suitable lighting system for many different artworks, with an important energy saving.

Each artwork was illuminated with the proper color temperature enhancing its features of polychromes. The results affirm that **luum®** – very high quality lighting devices with a natural emitted spectrum for different color temperatures, lenses and electronics –

has elevated the visual comfort, making more clear artworks' details while avoiding degradation of colors and artworks damages.

No better comment than visitors could reward us, and we believe that the judgment of many is summarized by the words of the Ambrosiana, prefect Monsignor Franco Buzzi: *"The new lighting interventions have been capable of renewing perception of the masterpieces preserved in Ambrosiana. Each artwork is made accessible and immediately understandable in the inspirational force that generated it. The calculated mixtures of hot and cold light allow an incomparable exaltation of the chromatic value, ensuring at the same time a perfect preservation of the paintings"*.





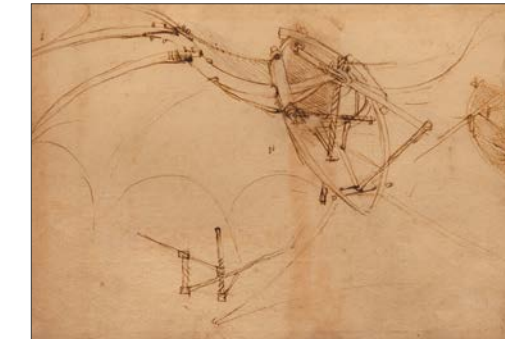
THE VENERANDA BIBLIOTECA PINACOTECA AMBROSIANA

ONE OF THE FIRST MUSEUMS OPEN TO THE PUBLIC

Origins and Masterpieces

The inspiring wind of Renaissance it's disclosed also in the Pinacoteca Ambrosiana and through it, as in a treasure chest of memory strong characters come to light for foresight and generosity, along with magnificent artworks of creativity and of human genius.

April 29, 1618 Cardinal Federico Borromeo donated his collection of paintings, sculptures, prints, drawings and engravings to Ambrosiana, establishing Art Gallery Ambrosiana. In this way was completed the majestic project started with the foundation of Library Ambrosiana in 1609.



In Milan began pulsing a new art and culture stronghold, with a host of Masterpieces that rise beyond their time and are still able to talk to our senses and essence.

Since its origins the cardboard of the **School of Athens** by Raffaello, the **Basket of Fruit** by Caravaggio, the **Adoration of the Magi** by Tiziano, the **Madonna of the Pavilion** by Botticelli, the **Holy Family** by Luini are in the heart of the collection. Also the Musician and the very renowned **Codex Atlanticus**, both realized by **Leonardo Da Vinci**, join the gallery with many other masterpieces.

A feast of emotions shakes us by visiting the rooms of the Art Gallery and along with them, a thousand of incentives to our imagination and reflection.

Federico Borromeo firmly believed that Art raises knowledge and spirit, thus he made the library and gallery available to public. The Ambrosiana became one of the first museums in the world open to the community, facing the issue of how best preserve and divulge the exhibited artworks.

Preservation and divulgation are some of the most difficult challenges of museums, and still far from being solved.



BE TOUCHED
BY LIGHT



The majestic staircase

The lighting *renovatio* began with the reshaping of the staircase, the great access to the halls of the Gallery.

In this area the light enhances the monumental aspect of the plaster casts of the Laocoonte and of Michelangelo's Pieta, while shadows bring plasticity to the volumes and dramatize fruition.

For this space, the project was designed to give a scenic and empathetic dimension in a total union between architectural space and artwork; it was achieved using open-beam spotlights, positioned on wall poles for the famous plaster copies. The light beams that illuminate the two works, directed by fins that converge the light rays towards them, leave aside the shadows free to roam on the wall in order to create a backdrop that evokes the dynamism of the sculptures. Different shades of white light have been used to bring out the appropriate shade of each plaster, different in the two molds.

The two big canvases with scenes from the Borromeo's life on the staircase sides and the one of Crespi stretched on the welcoming corridor, that were barely visible with the previous lighting, now live again as if they had been subjects of restoration. The intervention with shapers spotlights, which circumscribe the exact size, makes the works read in their entirety, recovering their historical and artistic importance.

Arch. Alessandro Colombini



A SCENOGRAPHIC AND EMPATHETIC EFFECT BETWEEN ARCHITECTURAL SPACE AND ART WORKS

The sculptures, from left to right:

PIETÀ
[copy from Michelangelo]
XVI century

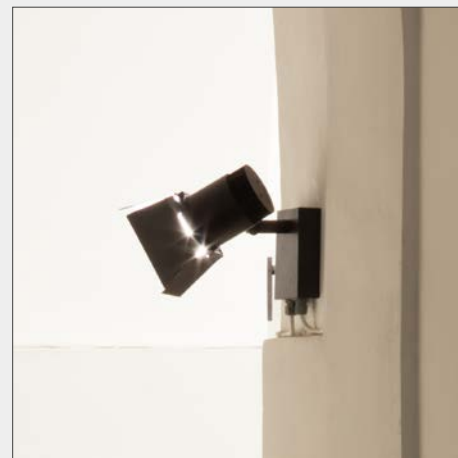
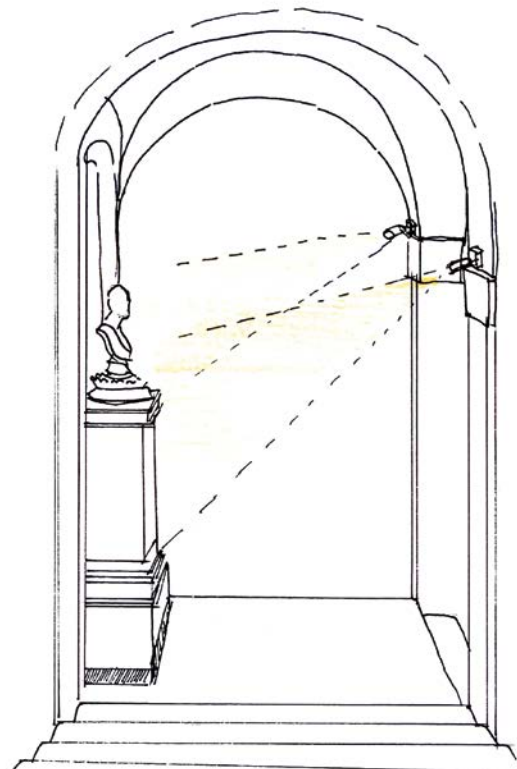
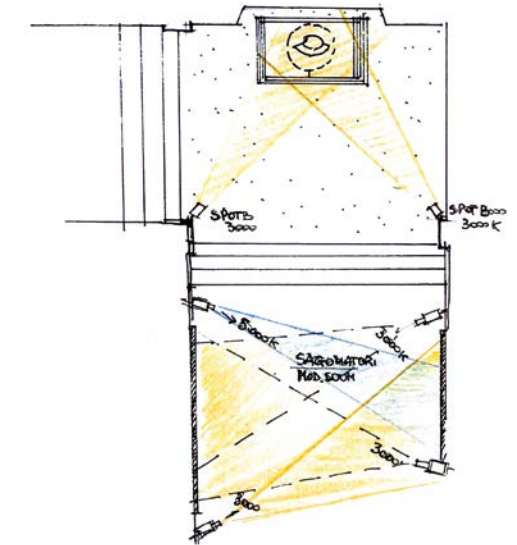
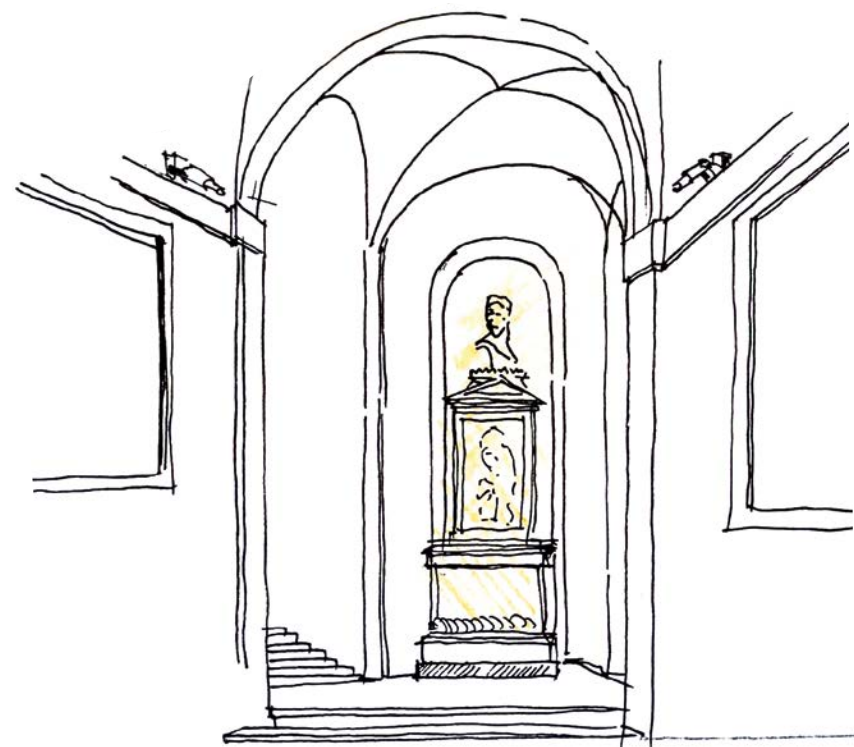
LAOCOONTE
[copy from vatican]
XVI century

The canvases, from left to right:

FEDERICO BORROMEO PORTA
IL VIATICO A SAN FILIPPO NERI
Antonio Busca

FEDERICO BORROMEO TRASLA
IL CORPO DI SAN CALIMERO
Andrea Lanzani

ENTRANCE HALL



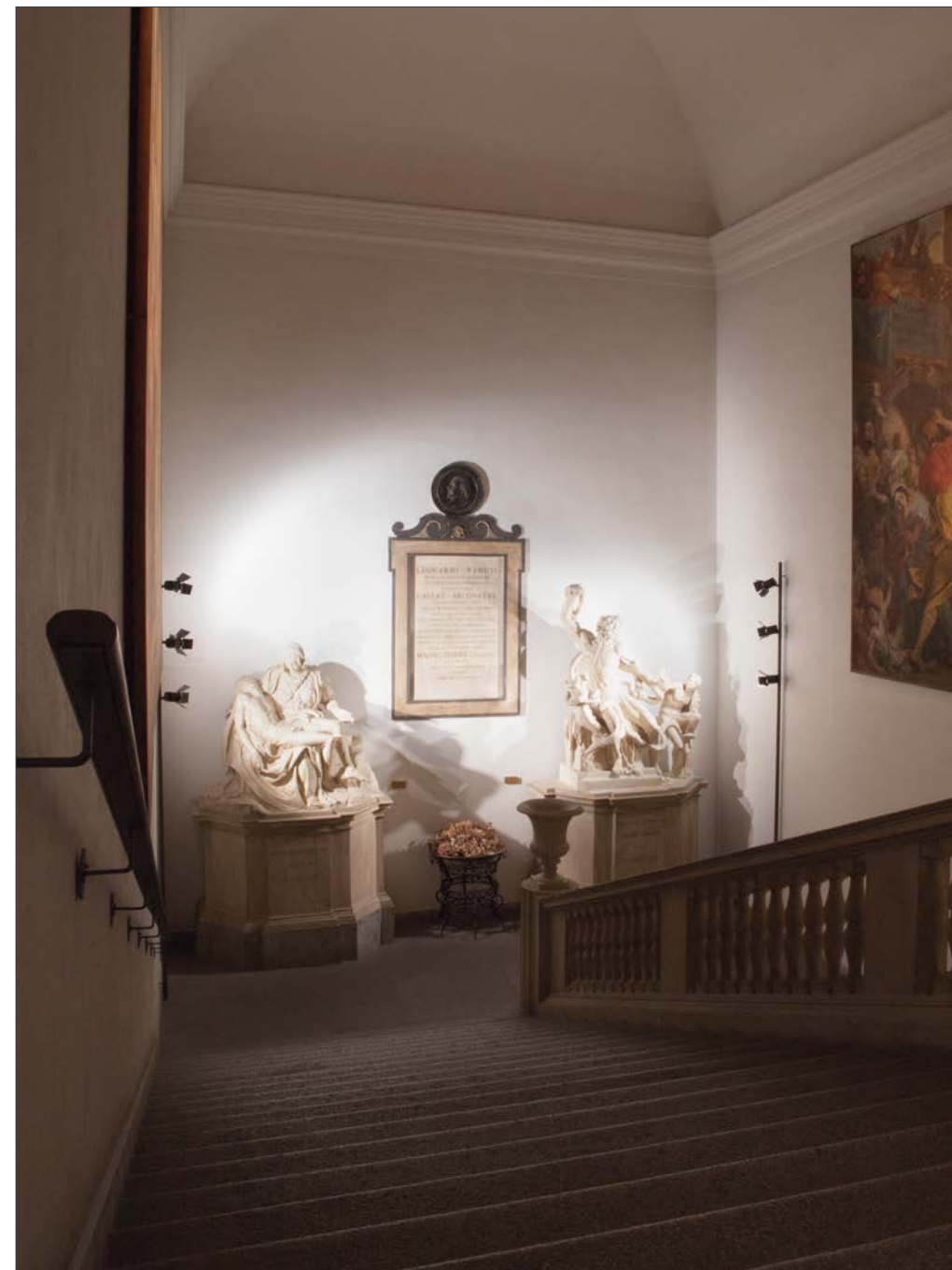
MONUMENTO
A GIUSEPPE BOSSI
Antonio Canova
Pompeo Marchesi
Domenico Moglia
Pelagio Pelagi

LED TECHNOLOGY FOR SUGGESTIVE ATMOSPHERES

Fom left to right:

PIETÀ
(copy from Michelangelo)
XVI century

LAOCOONTE
(copy from vatican)
XVI century





THE NEVER-SEEN
DETAILS



ROOM I

Collection of Cardinal Federico Borromeo



On the left:
GESÙ BAMBINO CON AGNELLO
Bernardino Luini

On the right:
UOMO IN ARMATURA
Tiziano Vecellio

Bottom:
ADORAZIONE DEI MAGI
Tiziano Vecellio





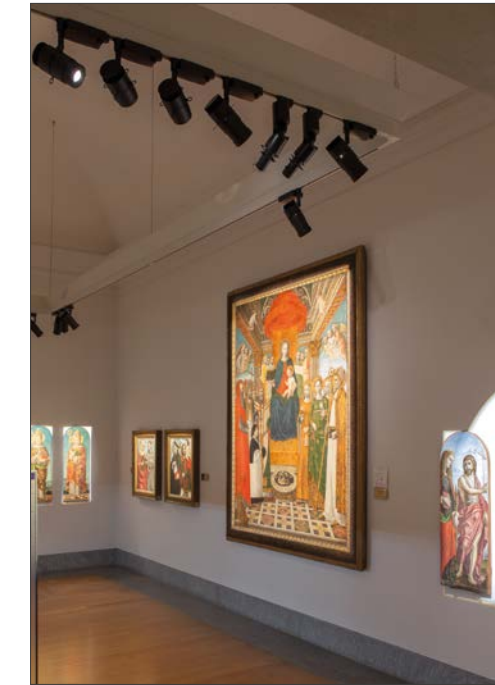
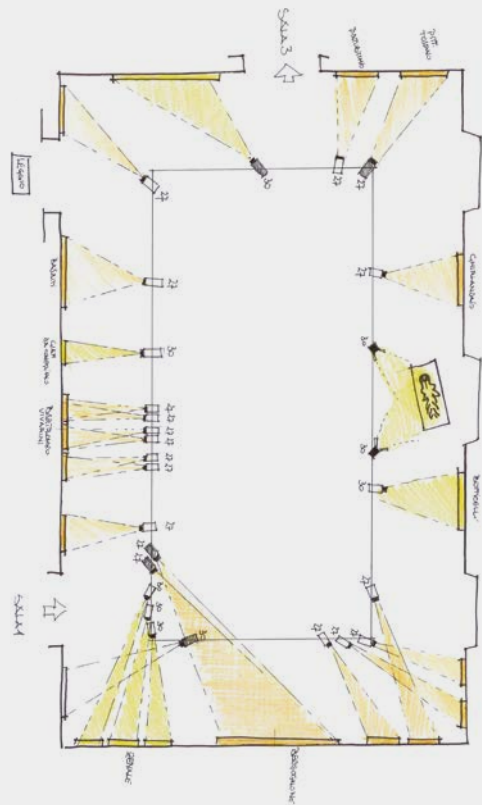
SANTA FAMIGLIA
CON SANT'ANNA E SAN GIOVANNI
Bernardino Luini

Detail on the opposite page:
top BEFORE
bottom AFTER



ROOM 2

Italian Painting of XV-XVI Centuries



Top: on the left:
POLITTICO
Bartolomeo Vivarini

Bottom from left to right:
SANTA ELISABETTA E SAN FRANCESCO
SAN PIETRO MARTIRE E SAN CRISTOFORO
Bergognone (Ambrogio da Fossano)

OBSERVING AND
RELISHING THE
MASTERPIECES'
DETAILS

MADONNA DEL PADIGLIONE
Sandro Botticelli
(Alessandro di Mariano Filipepi)

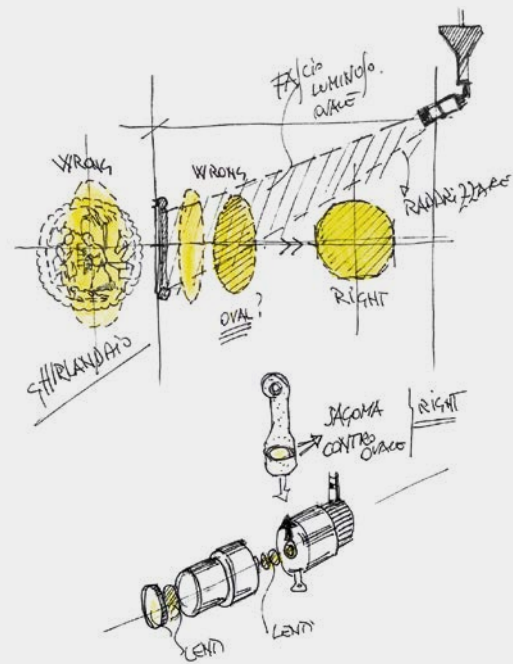


Detail on the side:
on the left BEFORE
on the right AFTER



Detail on the bottom:
on the left BEFORE
on the right AFTER

THE HIGH
TRANSPARENCY
DEGREE OF THE LENS
AND THE SUPERIOR
SHAPING SYSTEM
DELIHEATING EXATLY
THE SIZE OF
ARTWORKS ALLOWS
A PERFECT VISION



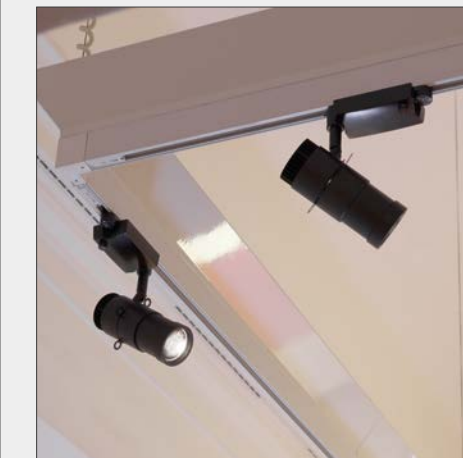
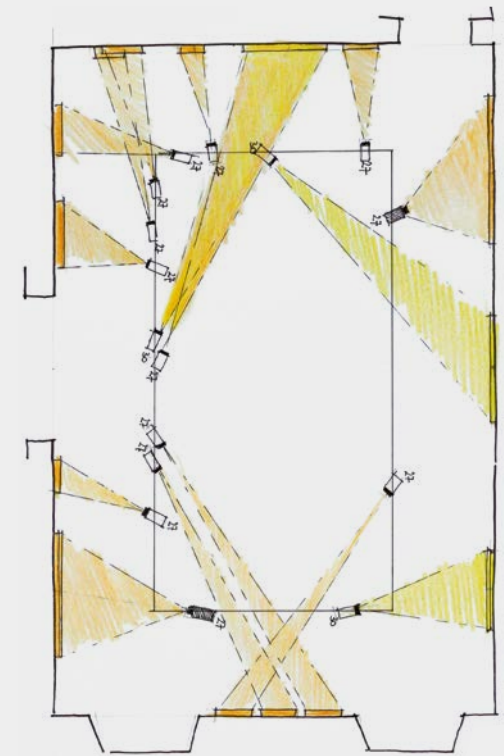
ADORAZIONE DEL BAMBINO
Bottega del Ghirlandaio
(Domenico Bigordi)

Detail on the opposite page:
on the left BEFORE
on the right AFTER



ROOM 3

Lombard Painting of XV-XVI Centuries



Top:
ADORAZIONE CON SAN ROCCO
Giampietrino (Gian Pietro Rizzoli)

Bottom:
MADONNA IN TRONO
CON SANT'AMBROGIO
E SAN MICHELE
Bramantino (Bartolomeo Suardi)

THE PROPER COLOR
TEMPERATURES
ENHANCE ARTWORKS'
FEATURES OF
POLYCHROMES

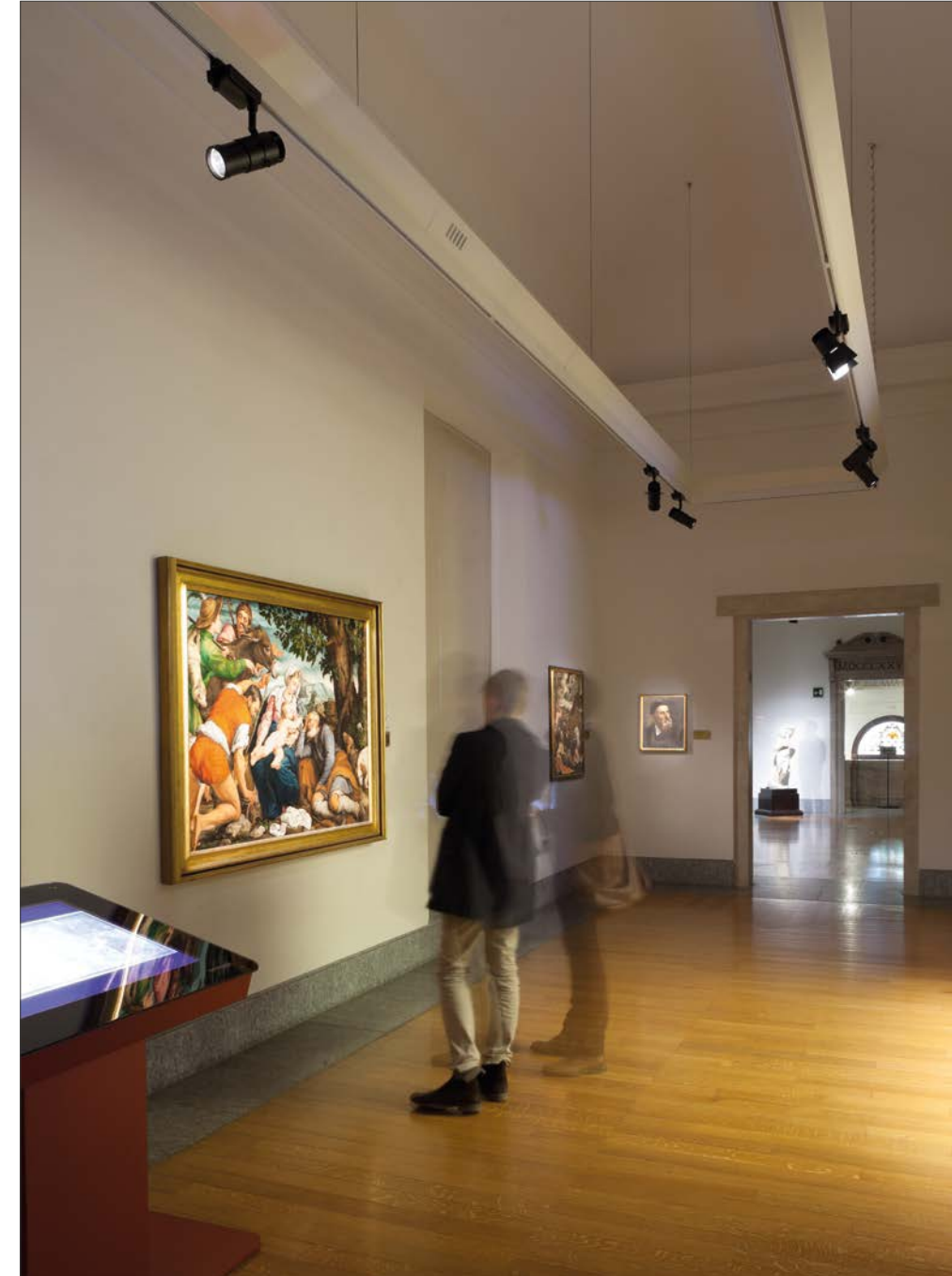
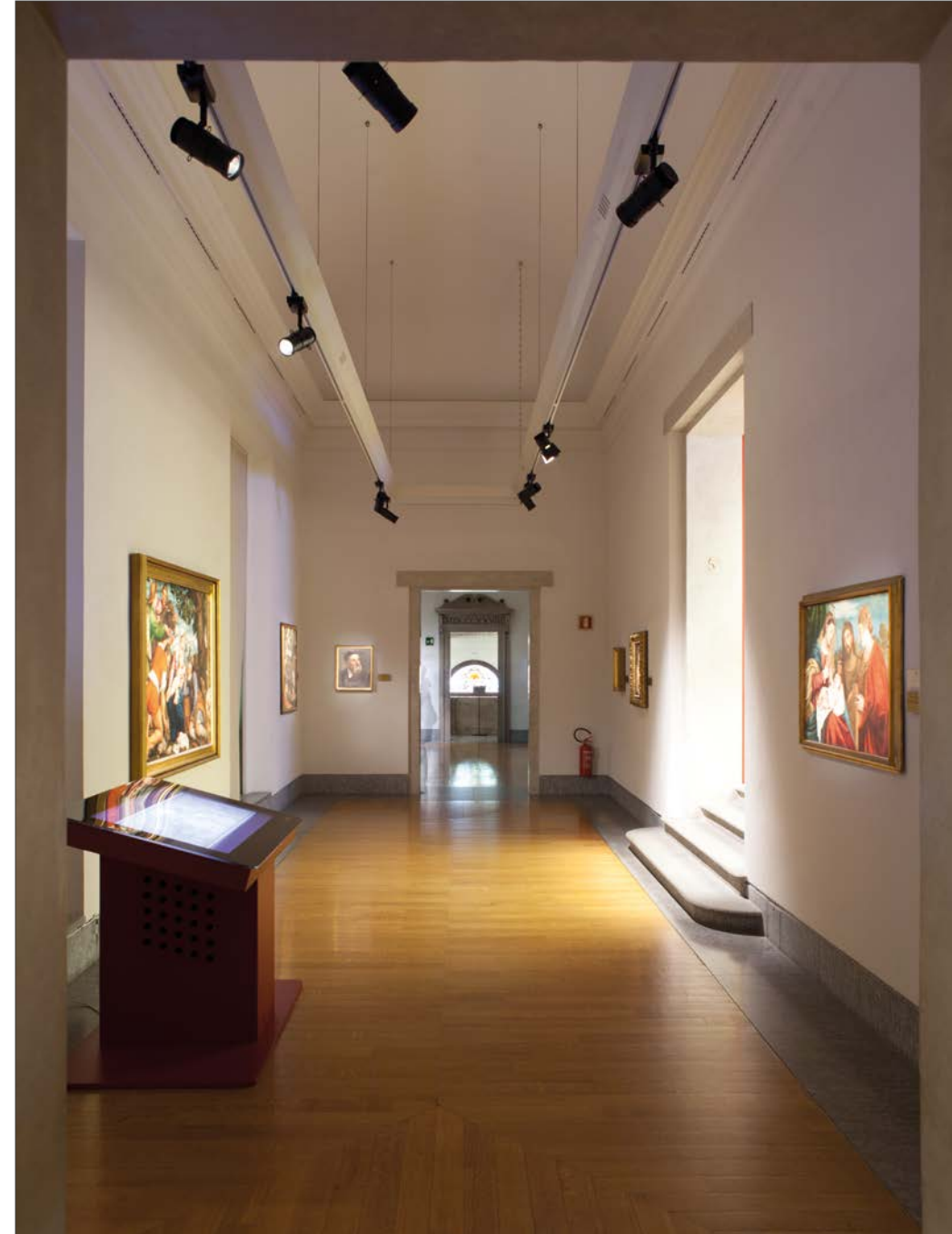
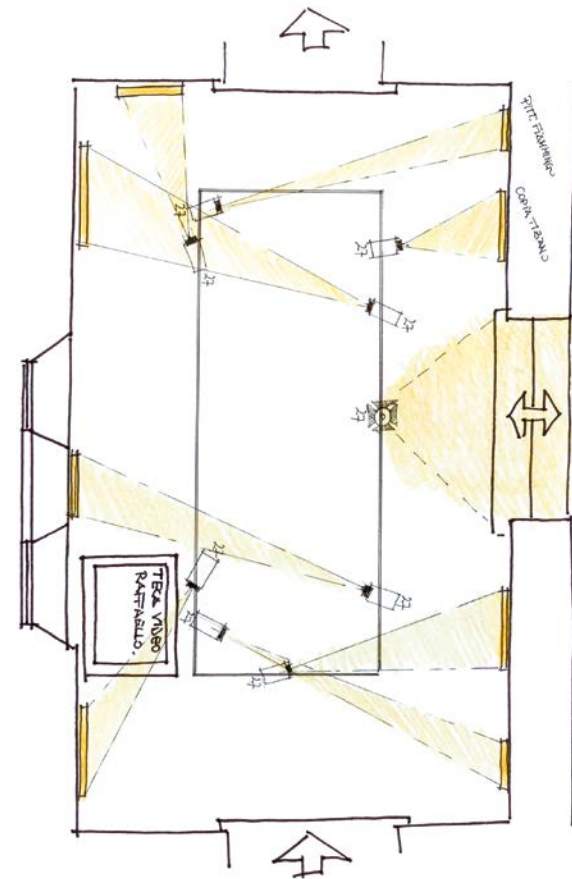
MADONNA E BAMBINO
CON SAN PIETRO
E SAN GIROLAMO
Cesare Magni

Detail on the opposite page:
on the left BEFORE
on the right AFTER





ROOM 4
Collection of Cardinal
Federico Borromeo



Bottom:
MADONNA CON IL BAMBINO,
CON SAN GIOVANNI BATTISTA
E SANTA CECILIA
Copia da Tiziano Vecellio



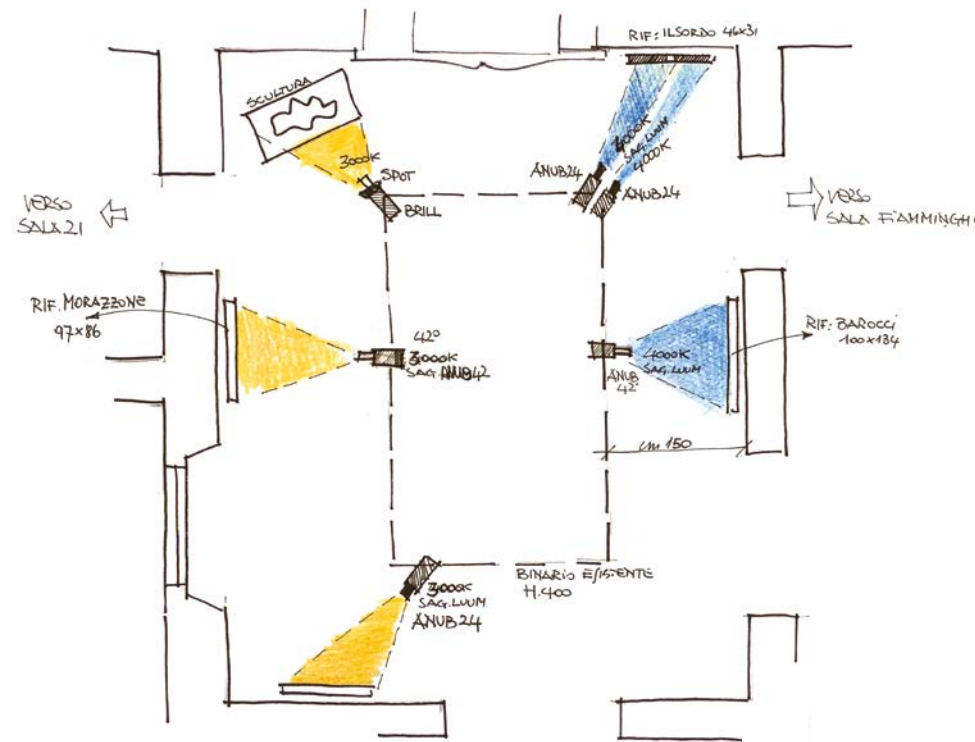
HIGH VISUAL
COMFORT AVOIDING
MEANTIME COLORS
DEGRADATION

RIPOSO DURANTE LA FUGA IN EGITTO
Jacopo Bassano (Jacopo da Ponte)

Detail:
on the left BEFORE
on the right AFTER

ROOM 6

Collection of Cardinal Federico Borromeo



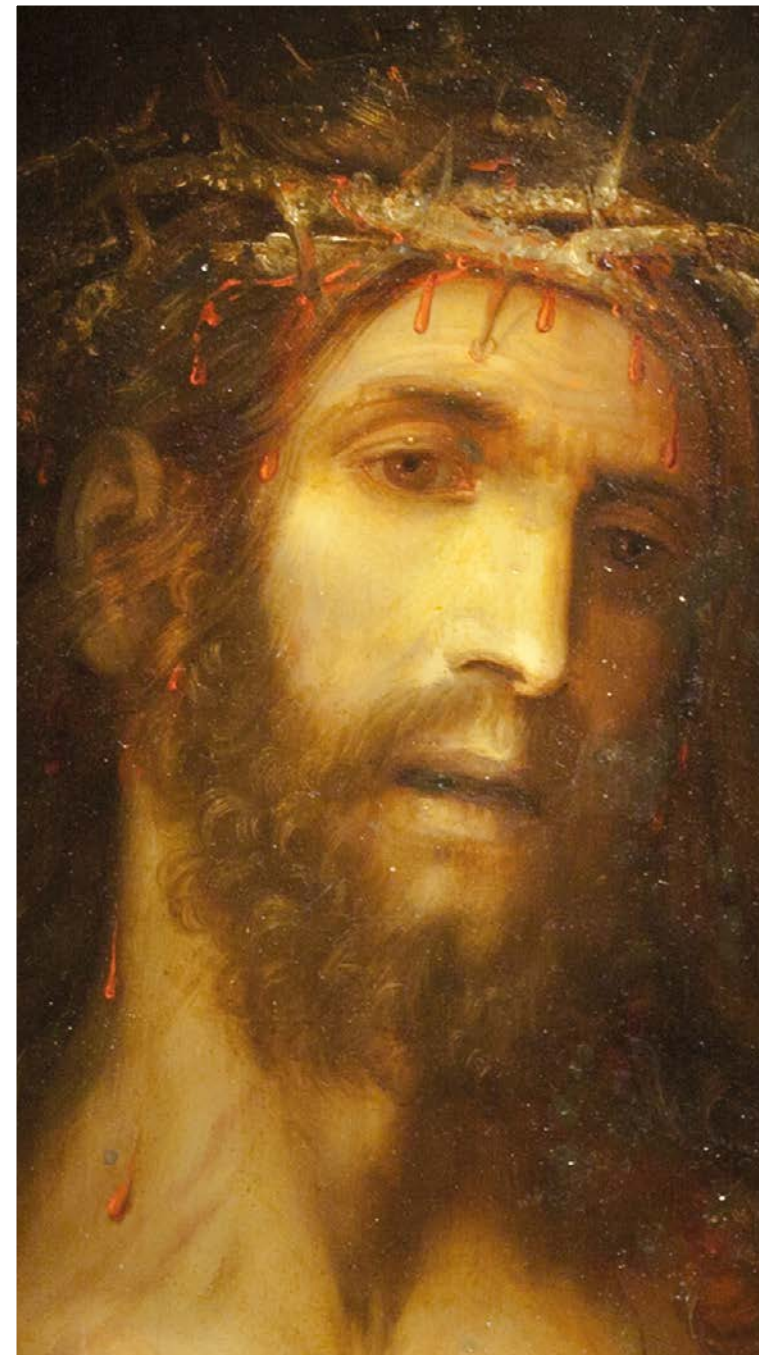
Bottom:
GESÙ TRA I DOTTORI
Morazzone (Pier Francesco Mazzucchelli)



SYMBOLS,
MEANINGS AND
MESSAGES FIRST
UNREADABLE,
NOW REACHABLE
AS IF A RESTORATION
HAS OCCURRED



CRISTO CORONATO DI SPINE
E LA MADONNA ADDOLORATA
Il Sordo (Antonio Travi)



Detail:
on the left BEFORE
on the right AFTER

The Flemish Hall

Particular attention was paid to the lighting of this room, where you can admire the Flemish works collected by Federico Borromeo and particularly dear to him. Composed of paintings in which the religious subject turns in large landscape views, the lighting project has highlighted the magnificent details of Brueghel and Brill, authors of most of the paintings in this section of the museum.

If from Brueghel paintings almost all the microscopic details of the endless items depicted in now emerge with a chromatic and dimensional shrill recall, in Brill's paintings a further research concern the arising of their own true identity, the atmosphere – almost symbolic and climatic too – that the painter has instilled, obtained through unique lighting devices for each different canvas.

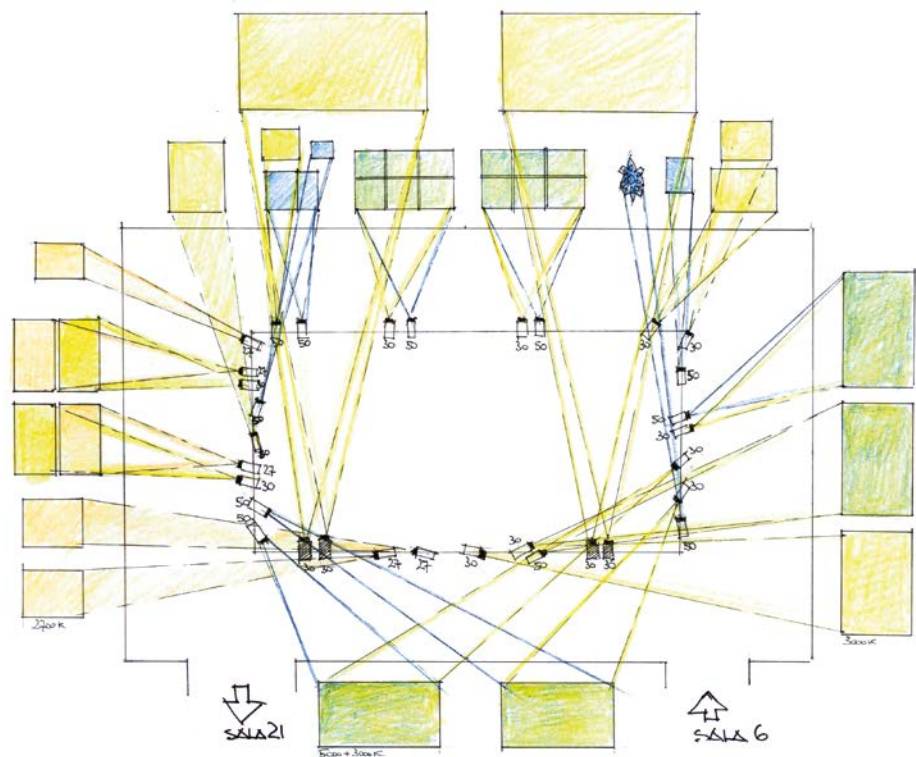
Different color temperatures spot-lights have been used to illuminate these paintings, in order to bring out the cold northern light (well known by the author) that was hidden in them, albeit showing the typical Lazio landscapes and Roman countryside with the majestic architectural vestiges of an ancient era. The memory of the artist's home country light is the main component of the atmosphere that animates these paintings depicting typical sites of central Italy.

Arch. Alessandro Colombini



IN EVIDENCE
THE WONDERFUL
DETAILS
OF BRUEGHEL
AND BRILL WORKS

ROOM 7
Collection of Cardinal
Federico Borromeo



Top:
PAESAGGIO CON REBECCA AL POZZO
Paul Bril

Bottom:
SEI PAESAGGI
Jan Brueghel and Paul Bril

THE CLEAN,
NATURAL LIGHT
ALLOWS A PERFECT
LIGHTENING

VASO DI FIORI CON GIOIELLO,
MONETE, CONCHIGLIE
Jan Brueghel



Detail on the side:
on the left BEFORE
on the right AFTER



Detail bottom:
on the left BEFORE
on the right AFTER



ALLEGORIA DELL'ACQUA
Jan Brueghel

Detail:
on the left BEFORE
on the right AFTER

MICROSCOPIC
DETAILS OF
THE ENDLESS
ITEMS DEPICTED IN
NOW EMERGE WITH
A CHROMATIC
SHRILL RECALL

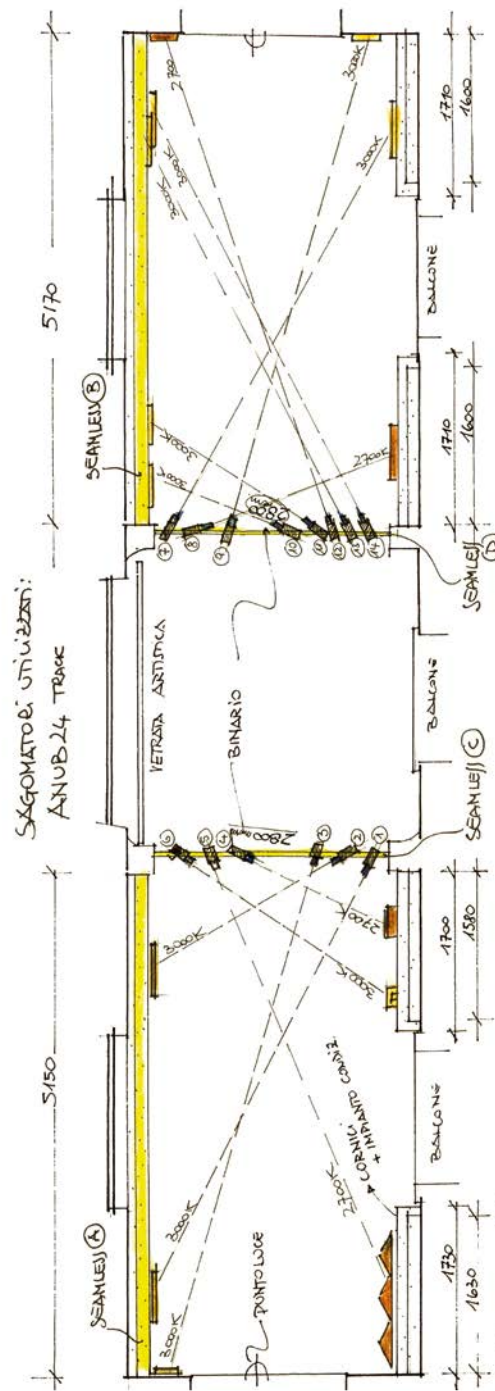
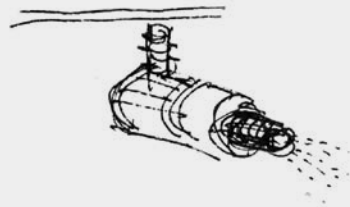


PASSAGGIO CON LA CONVERSIONE
DI SAN PAOLO
Paul Bril

Detail:
on the left BEFORE
on the right AFTER

NOW EMERGE
THE COLD
NORTHERN LIGHT
WELL KNOWN BY
THE PAINTER

ROOM 21
Flemish
and German Painting
of XV-XVII Centuries



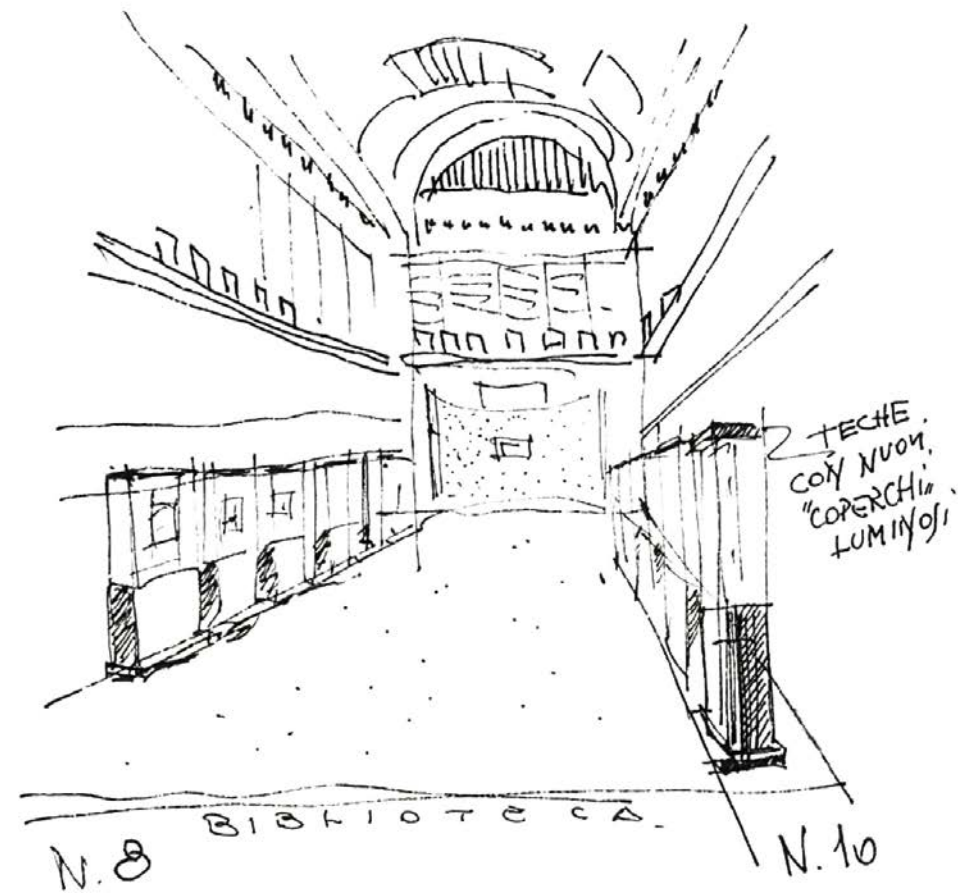
ADAMO ED EVA NEL PARADISO
TERRESTRE
Jan Brueghel il Giovane



ART
ON STAGE



SALA FEDERICIANA



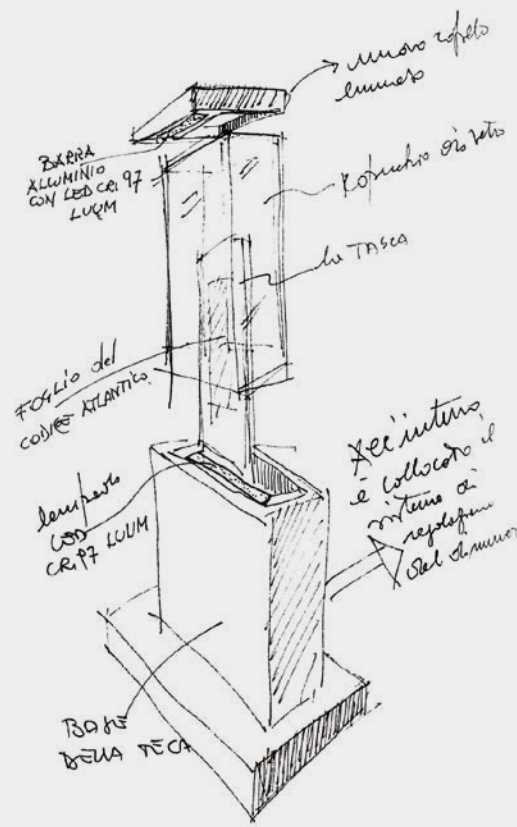
CALCULATED
MIXTURES
OF WARM AND COLD
LIGHT ALLOW
AN INCOMPARABLE
EXALTATION
OF THE CHROMATIC
VALUE

CANESTRO DI FRUTTA
Caravaggio (Michelangelo Merisi)

Detail on the opposite page:
on the left BEFORE
on the right AFTER



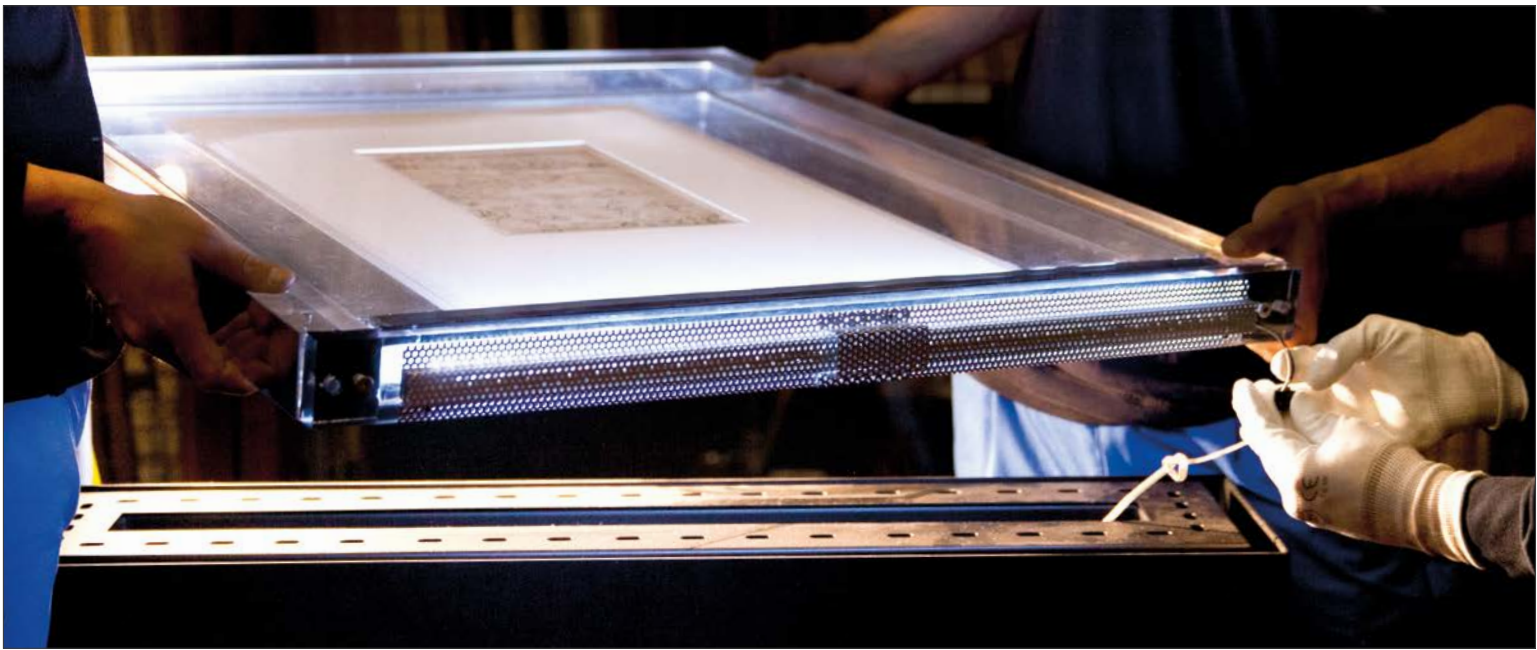
HIGH QUALITY
OF LIGHT, HIGH
ENERGY SAVING



CODICE ATLANTICO
Leonardo Da Vinci



Showcases' details of the new illuminating system with **luum** LED light sources



OLD
LIGHTING



HIGH QUALITY LEDS
WITH A NATURAL
EMITTED SPECTRUM
VERY SIMILAR
TO SUNLIGHT



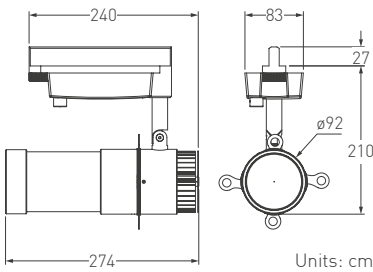
NEW
LIGHTING






luum® LED
TECHNOLOGY

ANUB 12

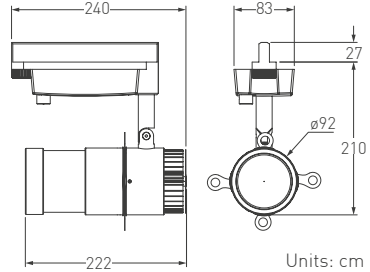
SPOTLIGHT TRACK WITH 12° OPTIC






FAMILY DATASHEET	
Track spotlight with high-power LED technology for museums, exhibitions, hospitality industry, retail	
MATERIALS DATASHEET	
Body	Black anodized aluminium
Lens	High refractive index glass
Track	EUROSTANDARD 3-phase
Heat sink	Black anodized aluminium
Framing slides	Black anodized aluminium
Light source	COB 20x24 efficiency (80lm/W)
LIGHTING DATASHEET	
LED	TRI-R for luum
CRI	Ra97 (Color Rendering Index)
CQS	Qa97 (Color Quality Scale)
Beam angle	12° SPOT
Color Temp.	2700K 3000K 4000K 5000K
Luminous flux	lm (collecting data)
ELECTRICAL DATASHEET	
Mains Voltage	220/240V 50/60Hz
Power	23W
Room Temp.	+30 °C
MECHANICAL DATASHEET	
Horizontal orientation	355°
Vertical orientation	up +10° down -95°
Estimated weight	2,3 kg
POWER SUPPLY DATASHEET	
Power supply	Electronic dimmable 1-10V
CERTIFICATION	
   Classe I	

ANUB 24

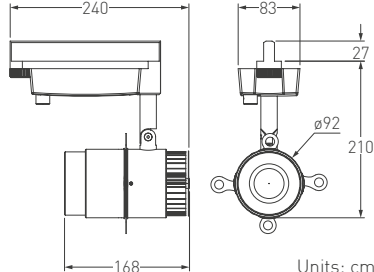
SPOTLIGHT TRACK WITH 24° OPTIC






FAMILY DATASHEET	
Track spotlight with high-power LED technology for museums, exhibitions, hospitality industry, retail	
MATERIALS DATASHEET	
Body	Black anodized aluminium
Lens	High refractive index glass
Track	EUROSTANDARD 3-phase
Heat sink	Black anodized aluminium
Framing slides	Black anodized aluminium
Light source	COB 20x24 efficiency (80lm/W)
LIGHTING DATASHEET	
LED	TRI-R for luum
CRI	Ra97 (Color Rendering Index)
CQS	Qa97 (Color Quality Scale)
Beam angle	24° FLOOD
Color Temp.	2700K 3000K 4000K 5000K
Luminous flux	lm (collecting data)
ELECTRICAL DATASHEET	
Mains Voltage	220/240V 50/60Hz
Power	23W
Room Temp.	+30 °C
MECHANICAL DATASHEET	
Horizontal orientation	355°
Vertical orientation	up +10° down -95°
Estimated weight	2,15 kg
POWER SUPPLY DATASHEET	
Power supply	Electronic dimmable 1-10V
CERTIFICATION	
   Classe I	

ANUB 42

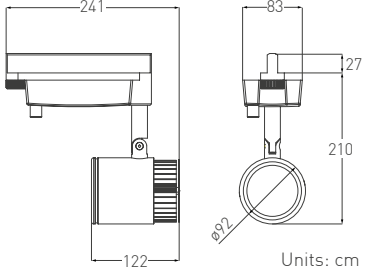
SPOTLIGHT TRACK WITH 42° OPTIC



FAMILY DATASHEET	
Track spotlight with high-power LED technology for museums, exhibitions, hospitality industry, retail	
MATERIALS DATASHEET	
Body	Black anodized aluminium
Lens	High refractive index glass
Track	EUROSTANDARD 3-phase
Heat sink	Black anodized aluminium
Framing slides	Black anodized aluminium
Light source	COB 20x24 efficiency (80lm/W)
LIGHTING DATASHEET	
LED	TRI-R for luum
CRI	Ra97 (Color Rendering Index)
CQS	Qa97 (Color Quality Scale)
Beam angle	42° WIDE FLOOD
Color Temp.	2700K 3000K 4000K 5000K
Luminous flux	lm (collecting data)
ELECTRICAL DATASHEET	
Mains Voltage	220/240V 50/60Hz
Power	23W
Room Temp.	+30 °C
MECHANICAL DATASHEET	
Horizontal orientation	355°
Vertical orientation	up +10° down -95°
Estimated weight	2,0 kg
POWER SUPPLY DATASHEET	
Power supply	Electronic dimmable 1-10V
CERTIFICATION	
   Classe I	

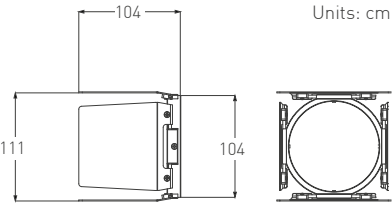
BRILL

PROJECTOR TRACK



FAMILY DATASHEET	
Track projector with high-power LED technology for museums, exhibitions, hospitality industry, retail	
MATERIALS DATASHEET	
Body	black anodized aluminium
Lens	High refractive index glass
Frontal glass	PMMA satin
Track	EUROSTANDARD 3-phase
Heat sink	Black anodized aluminium
Light source	COB 20x24 efficiency (80lm/W)
LIGHTING DATASHEET	
LED	TRI-R for luum
CRI	Ra97 (Color Rendering Index)
CQS	Qa97 (Color Quality Scale)
Beam angle	16° 30° 50°
Color Temp.	2700K 3000K 4000K 5000K
Luminous flux	lm (collecting data)
ELECTRICAL DATASHEET	
Mains Voltage	220/240V 50/60Hz
Power	23W
Room Temp.	+30 °C
MECHANICAL DATASHEET	
Horizontal orientation	355°
Vertical orientation	up +10° down -95°
Estimated weight	1,25 kg/0,35 kg (shading flaps)
POWER SUPPLY DATASHEET	
Power supply	Electronic dimmable 1-10V
CERTIFICATION	
   Classe I	

SHADING FLAPS
Not to sell apart





CREDITS

Special thanks:

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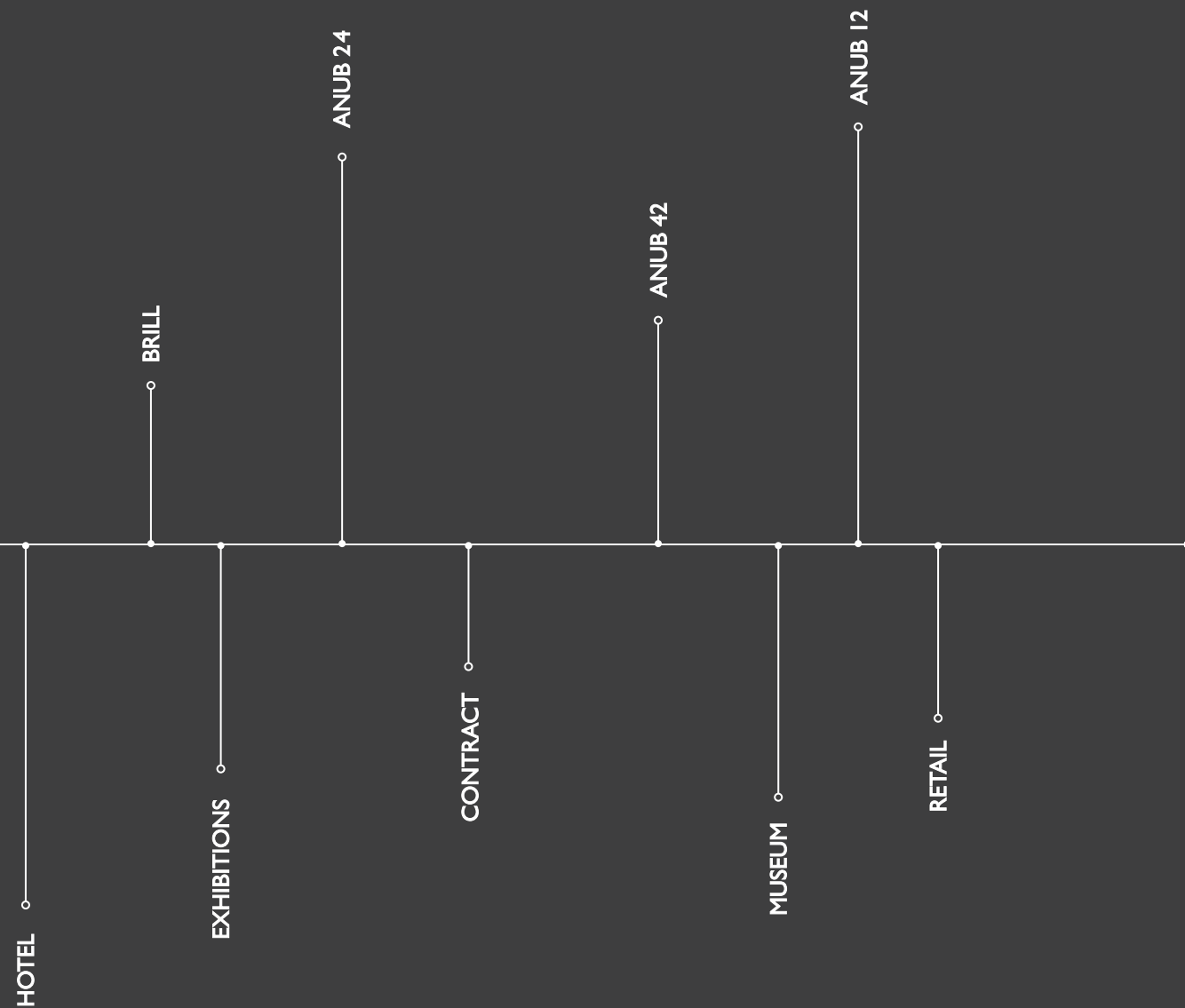
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