

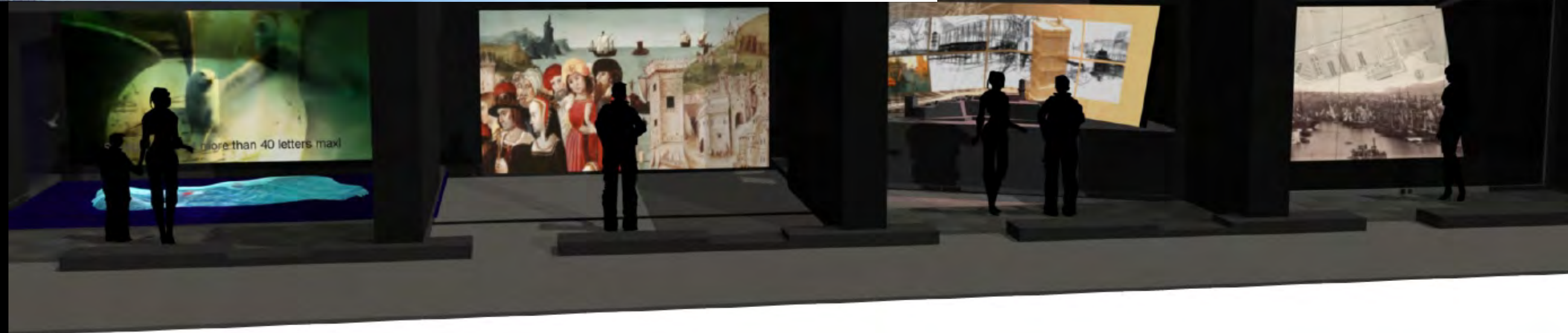
VIRTUAL JOURNEY

Virtual Journey through the history of Fort Saint Jean (VJ-FSJ)

Musée des Civilisation de L'Europe et de la Méditerranée | MuCEM in Marseille



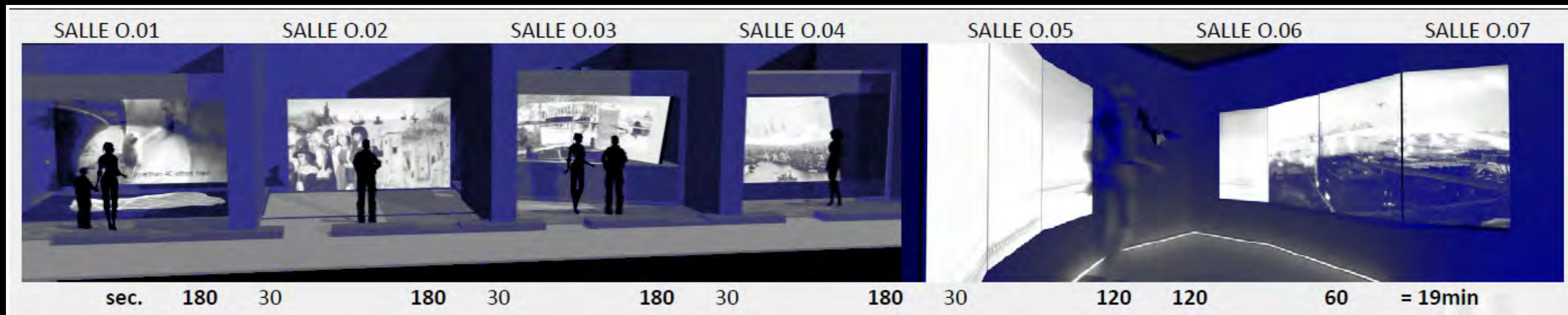
HISTORY & EVOLUTION



Marseille France - 2016

Project Title: **Virtual Journey through the history of Fort Saint Jean (VJ-FSJ)**

VJ-FSJ project is a multi-disciplinary technology-based exhibit, based in the interpretation of the history of the Fort Saint Jean project (VJ -FSJ). a prominent historical and architectural site , built in 1660 by Louis XIV at the entrance to the Old Port in Marseille,France. A digital heritage narrative and storytelling embedded within physical and virtual architecture. It combines mixed media display systems , Digital Animation, VFX effects,holographic imaging, video mapping on 3D printed models, augmented audiovisual environments.



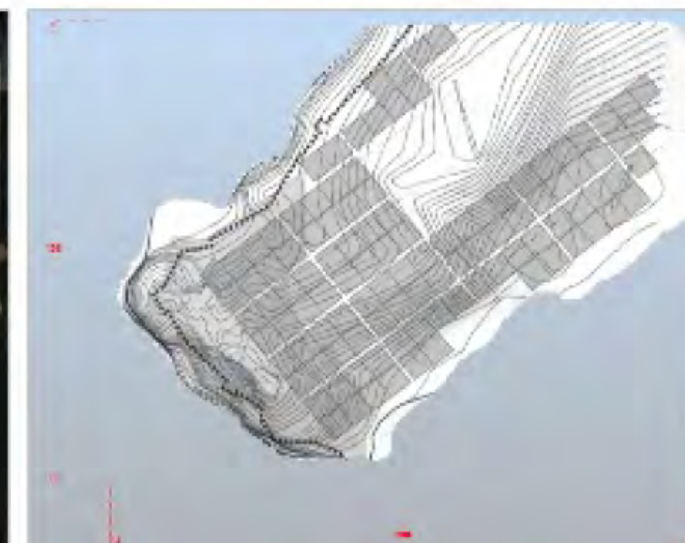
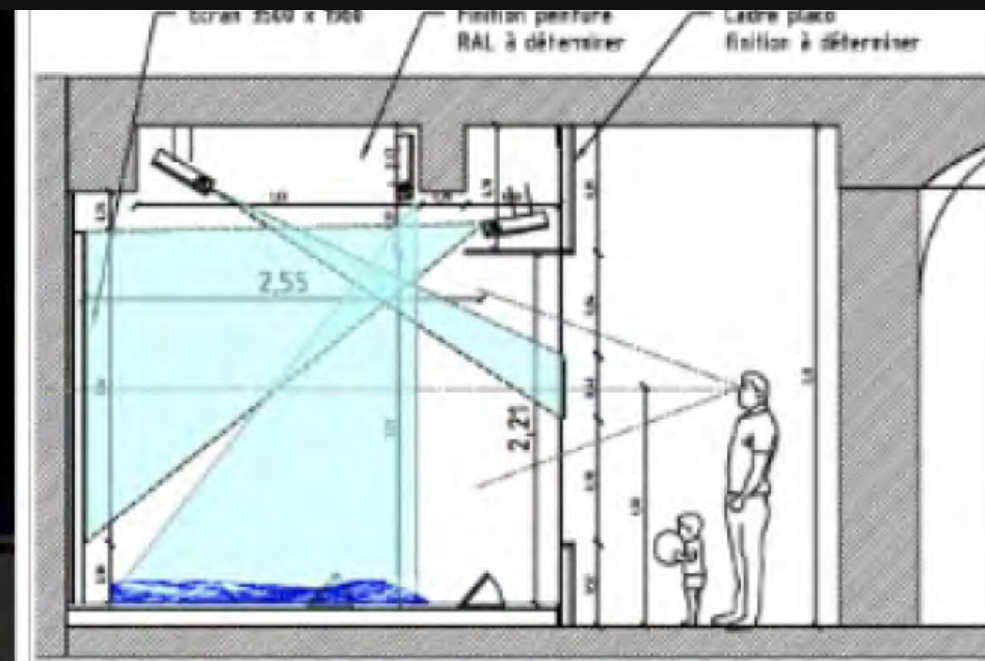
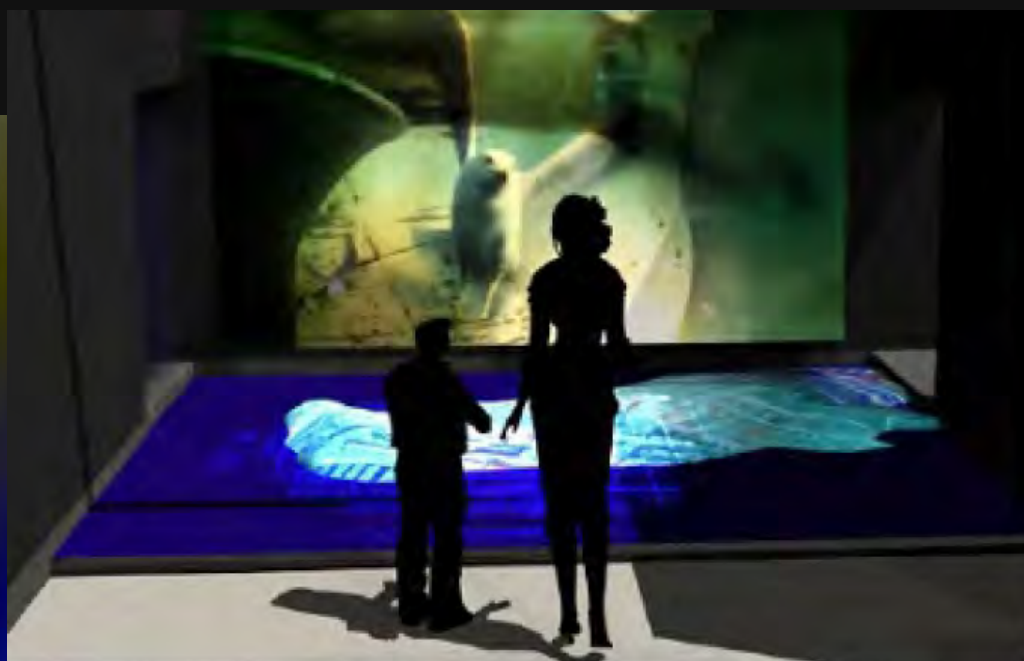
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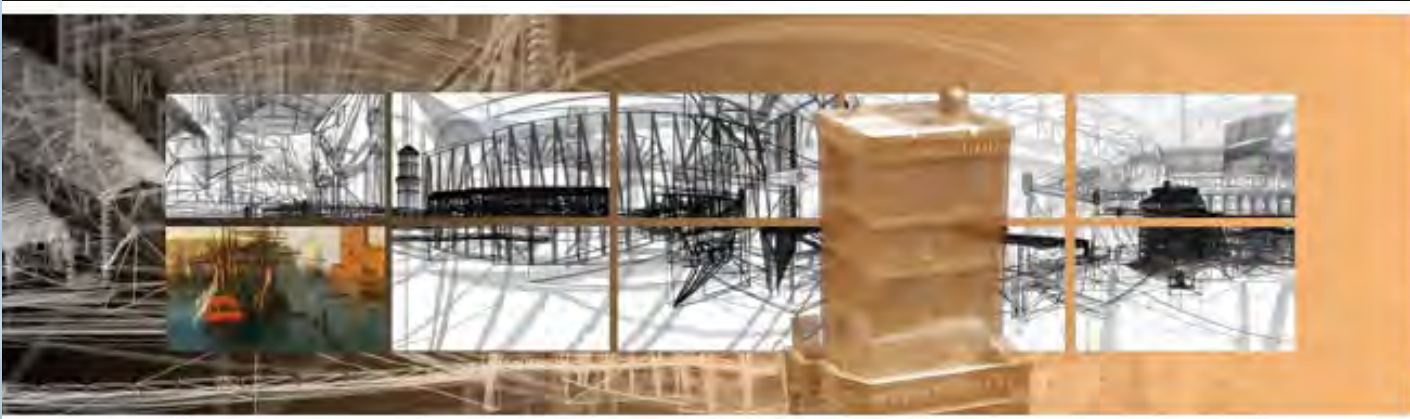
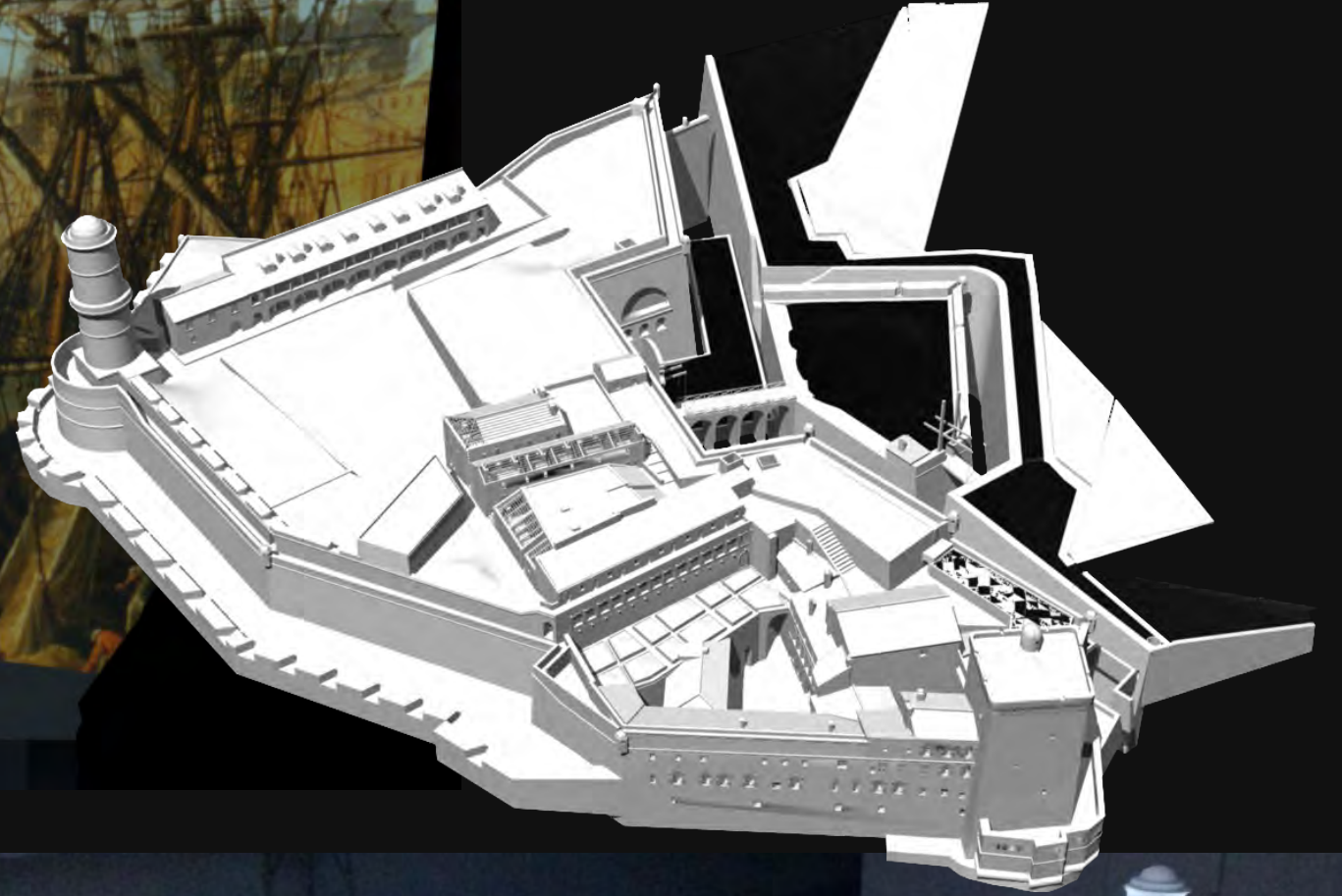
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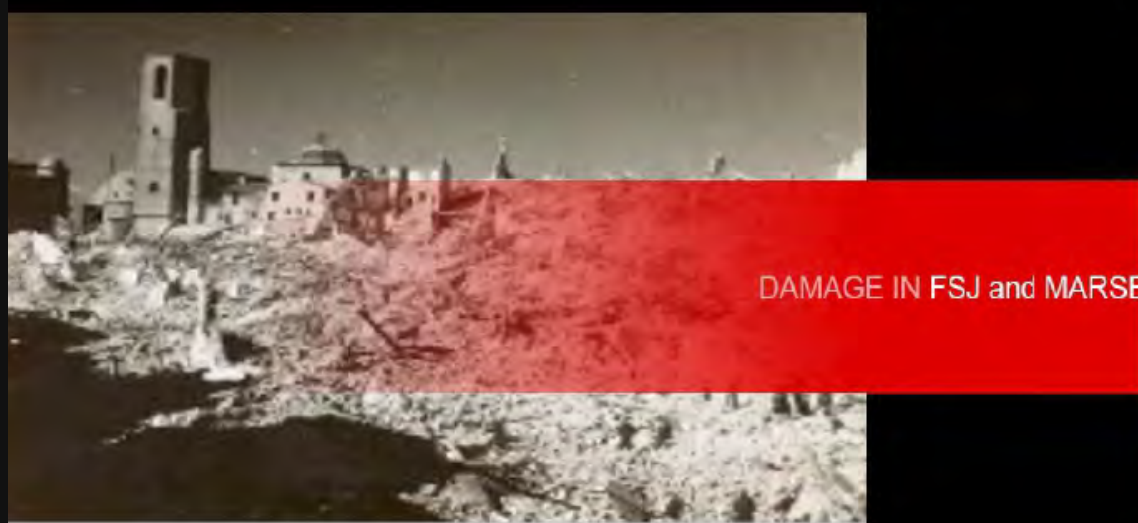


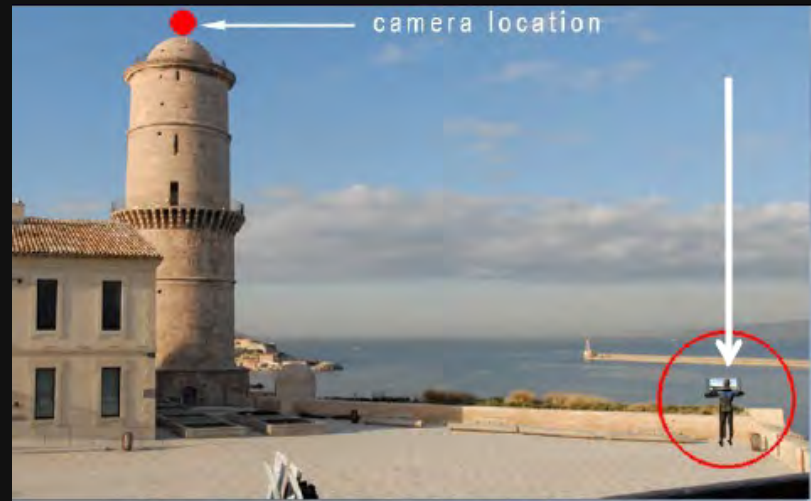
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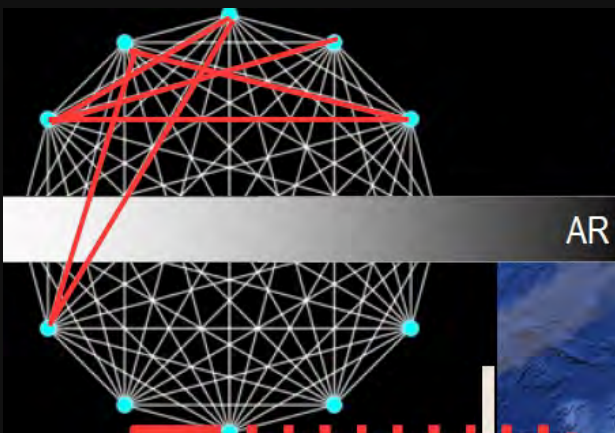
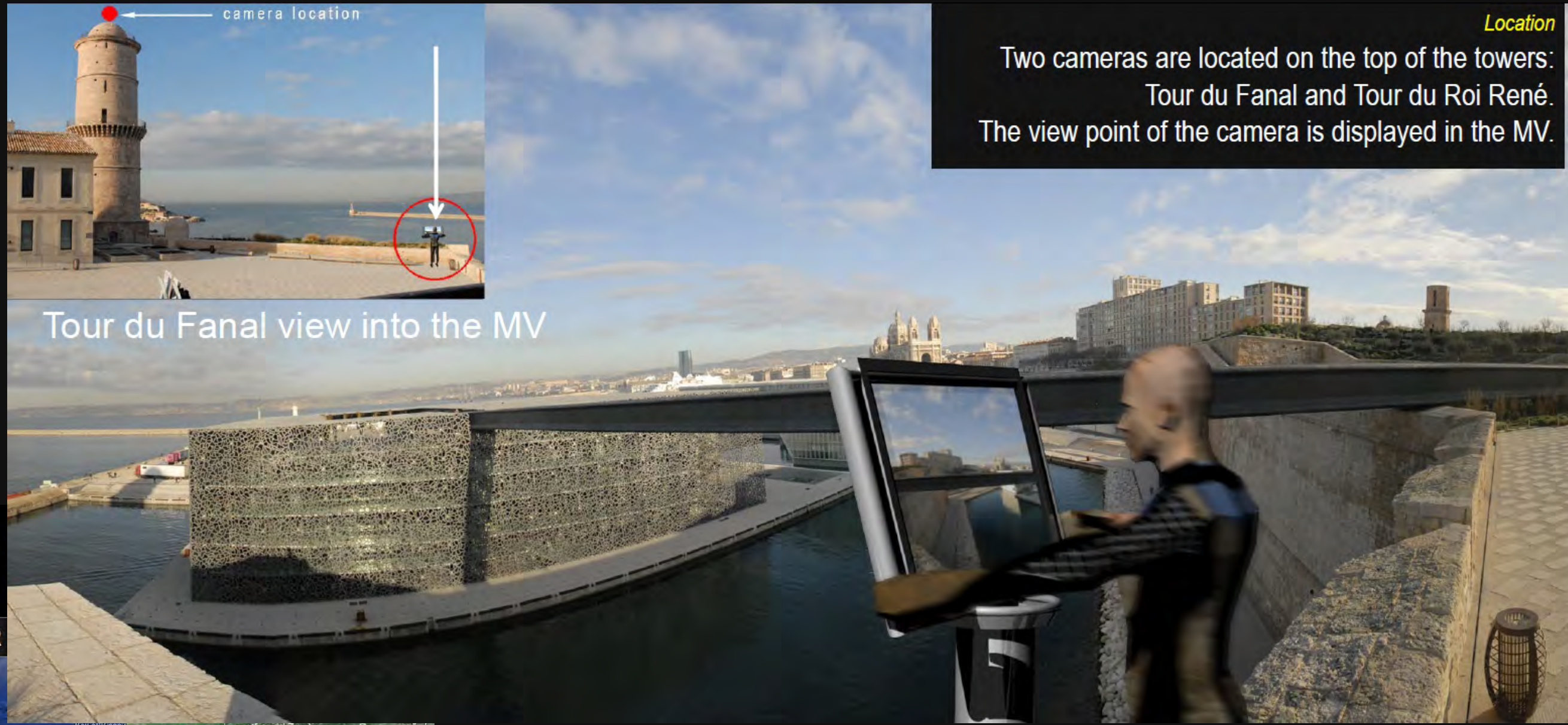






Tour du Fanal view into the MV

Location
 Two cameras are located on the top of the towers:
 Tour du Fanal and Tour du Roi René.
 The view point of the camera is displayed in the MV.



AR



Virtual Journey through the history of Fort Saint Jean

The exhibit was opened in 2018 at The **Galerie des Officiers**, located in the Fort Saint-Jean of the **Musée des Civilisation de L'Europe et de la Méditerranée | MuCEM** in Marseille. Partners **IMéRA** (Mediterranean Institute for Advanced Research), **Aix-Marseille University**, France; **Map Lab-Centre**, **Équipe MAP-Gamsau**, Campus CNRS, Marseille.

FF Role/ Responsibility: (a) Cross disciplinary research, new media exhibit design (i.e. scenography, technology and media design); design solution for the media installations, projection and display systems of the entire exhibit (total 7 rooms); (b) Responsible - Digital Animation – Script & Storyboard: Concept and content design (Digital Narrative, storytelling, Video, 3D digital animation and video mapping on 3D printed models)



Virtual Journey through the history of Fort Saint Jean



Virtual journey through the history of the Fort Saint Jean, Marseille (VJ -FSJ Project)

Case Study: New Media exhibit at the Musée des civilisations de L'Europe et de la Méditerranée (MuCEM)

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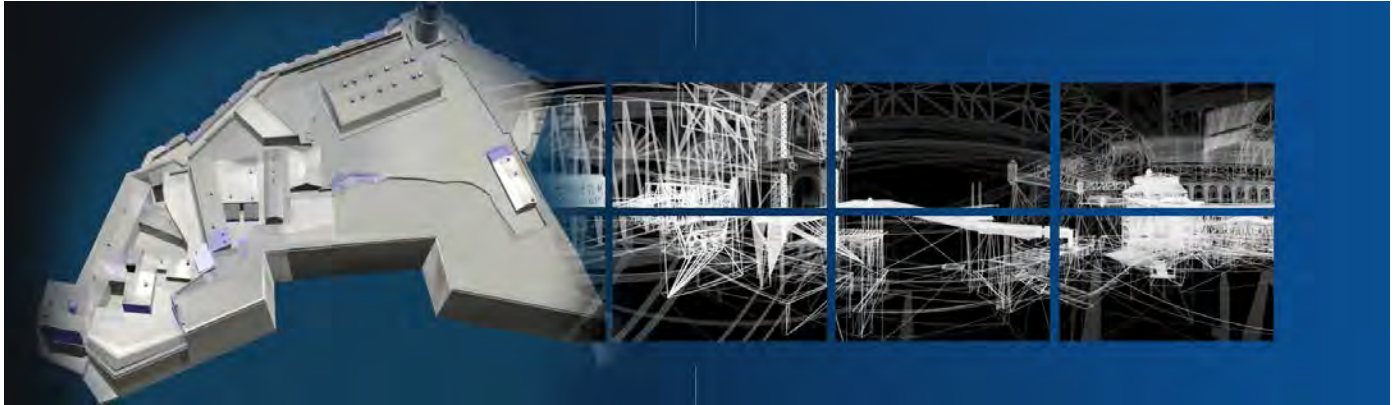


Fig. 1. Fort Saint Jean 3D Printed Model + 3D Wire-frame digital model. Setup in exhibit space, Galerie bas des Officiers, ROOM O.03

Abstract - This paper presents insights about the design of a digital heritage exhibit, namely, **Virtual Journey through the history of Fort Saint Jean (VJ-FSJ)** project, based in Fort Saint-Jean (FSJ), a prominent historical and architectural site in Marseille, France. VJ-FSJ project is a multi-disciplinary technology-based exhibit, which combines mixed media display systems, holographic imaging, video mapping on 3D printed models, augmented audio-visual environments, digital heritage narrative and storytelling embedded within physical and virtual architecture. The exhibit is planned to open in 2018 at the Musée des Civilisations de L'Europe et de la Méditerranée (MuCEM) in Marseille. The design is one of the outcome of an ongoing interdisciplinary research project entitled: New generation interaction in cultural heritage: immersive interactive exhibitions within the field of art and architecture in museums (NGI-CH research). The paper begins by presenting a general overview of the research, project background, goals, aims, historical framework, heritage context, and then moves on to address outcomes: case study (exhibit design), methodologies, technologies and design solutions, then closes with conclusions and lessons learned.

Keywords – DH Museum exhibitions, cultural heritage, digital narrative and storytelling for education in museums, 3D printing rapid prototyping and reproduction, video mapping, holographic techniques, mixed media installation, cross-disciplinary research and design practice.

I. INTRODUCTION

1.1 Project History, Background and Research Framework

VJ-FSJ project is an outcome of the an interdisciplinary research NGI-CH developed by Franz Fischnaller [1], as artist and researcher in residence at the Institut d'études avancées - Exploratoire Méditerranéen de l'interdisciplinarité of Aix-Marseille University (IMÉRA) [2], in partnership with the Musée des Civilisations de L'Europe et de la Méditerranée (MuCEM) [3] and the Laboratoires du modèle et simulations

pour l'architecture et le patrimoine (MAP Laboratoires) [4]. Project outcomes were the result of a collaborative effort and support of institutions and experts from the fields of history, archaeology, architecture, design, social science, engineering, technology, storytelling, communications and management.

Research Context - Motivation - Goals

In the past two decades, museums have seen rapid changes in terms of the application of information technology, which has been used to represent their collections in new ways. Museums provide a public service and communicate through collections associated with information applications which create new visions of museum issues for the visitor [5]. NGI-CH research focuses on the intersection of Art, humanities and social sciences (history, archaeology and cultural studies) combined with leading technologies and advanced new digital media tools with the aim of empowering engaging and creative design solutions for the fruition of content and cultural heritage experience [6]. A major motivation behind the research is to envision experimental approaches for exhibit design solutions, based on tangible and intangible cultural heritage data that can provide context and strengthen the possibilities for enhancing the creation of high quality digital heritage experience [7]. Digital Heritage works that can strengthen the European capability for the creation of new forms of digital entertainment and engagement based on cultural heritage, and that can promote the use of new technologies such as new media and new modalities of access making cultural heritage more accessible to the global community [8]. Research focus is given to the use of new forms of integrated mixed media and technology for bridging audiences to their heritage, in ways that inspire, stimulate and educate new generation audiences and the general public (Fischnaller et al. 2018) channeling new forms of creativity and adaptability that can contribute to open new paths for exploration transcending the expanded use of technology as

tools for traditional reconstruction of the past inside the museum, often being viewed as conservators of the past [9].

1.3 Trans-disciplinary approach and multi-disciplinary design methodology

Experts, researchers and practitioners in the field of cultural heritage sustain that cross-disciplinary interaction and shared practices among st disciplines with different areas of expertise are crucial to effectively design, develop and implement efficient, meaningful and innovative projects, and for bringing new perspectives to the Digital Heritage field. NGI-CH project principles are based upon connecting different forms of knowledge and shared practices across the field of art, design, cultural heritage, humanities, social sciences with emphasis on the use and intersection of leading technologies applied to the field of Cultural Heritage. The research embraces a interdisciplinary-based research methodology combined with cross-disciplinary fertilization, strategic collaboration and knowledge creation [10].

1.4 Audience Mission

VJ-FSJ stems from the criteria that audience development plays a crucial role for successful museum management strategies [11]. Audience is central to any crucial action, strategy, design or creation for making effective exhibitions.

- A crucial role for successful museum management strategies
Major VJ-FSJ project exhibit mission is to stimulate users' learning and curiosity and to go beyond the picture (cultural assets, artifacts, heritage buildings, etc.) related to Fort Saint-Jean and to explore the story in/behind and around this iconic cultural heritage site [12].

In this vein, this paper discusses the NGI-CH research and VJ-FSJ project (outcome).

II. PHASES, CULTURAL HERITAGE, CONTEXT AND FRAMEWORK

2.1 Project Summary

The VJ-FSJ project consists in the design of a permanent exhibit representing the history and evolution of Fort Saint-Jean, a military complex and protagonist of the history of Marseille with a focus on five historical periods (49 BC, 1423, 1660, 1943, today). The design is articulated into two components:

A. Time&Space Media Exhibit: Exhibit Design and scenography, design for tech solutions, media installations, projection and display systems.

B. FSJ - Digital Animation – Script & Storyboard: Concept and content design (Digital Narrative, storytelling, Video, 3D digital animation and video mapping on 3D printed models).

2.2 FSJ Historical Patrimony and Cultural Heritage Context

Considered a historical monument since 1964, the Fort Saint-Jean (FSJ), built in 1660 by Louis XIV at the entrance to the Old Port is today one of the three sites that constitute the Musée des Civilisations de L'Europe et de la Méditerranée (MuCEM) [13]. A complete restoration carried out between 2009 and 2013 allows the public to visit the historic building,

as well as the new building, named J4, designed by architects Rudy Ricciotti and Rolland Carta [14]. Since 2013 FSJ is linked by two thin bridges to the historical district Le Panier, and to the Musée des Civilisations de L'Europe et de la Méditerranée (MuCEM) [15].

Although the foundations of the Fort Saint-Jean date back to the end of the twelfth century, the construction of the fortification on the site of the former Commanderie of the Hospitallers of St. John of Jerusalem dates back to the sixteenth century, when Louis XIV decided to strengthen the city's defenses [16]. It will retain a military relevance for more than three centuries. During the Second World War, German troops stored there a munitions depot whose explosion at the liberation of Marseille caused the destruction of many old buildings [17]. Vestiges of the very first Greek occupied around 600 BC were discovered in the site of the FSJ [18].

Fort Saint-Jean (FSJ) owes its name to the commanderie des Hospitaliers de Saint-Jean de Jérusalem established the extension of the mound Saint-Laurent, towards the end of the 12th century [19]. The origin of FSJ dates back to the 12th century and it has always had an important place in the life, history and culture of Marseille. At the time of the Crusades, the site was conceded to the Hospitallers of Jerusalem, who settled there and raised their commandery to route the troops to the Holy Land [20].

The *Gallérie des Officiers*, the space assigned for this exhibit are buildings and casemates located in the heart (central part) of the Fort Saint-Jean, constructed at the time of Vauban, a French military engineer who revolutionized the art of siege craft and defensive fortifications. He fought in all of France's wars of Louis XIV's reign (1643–1715)[21]. The *Seigneur de Vauban* and later *Marquis de Vauban* (1 May 1633 – 30 March 1707), commonly referred as *Vauban* (French: [vobã]), was a French military engineer who rose in the service to the king and was commissioned as a Marshal of France [22]. . Considered the foremost engineer of his time, Vauban is known for his skills, both in designing fortifications and breaking through them; his concepts, inspired by Pagan's "Les Fortifications", were the dominant model of fortification and siegecraft for nearly 100 years [23].

A. 2.3 Historical Periods of the exhibit content

The content of the exhibit is based on the exploration of five historical periods:

- 49 BC: the arrival of the Romans and the taking of the city to the Greeks by Jules Caesar;

1423: The sacking and looting of the city by the Aragonese;

1660: The recovery of the city by Louis XIV and construction of Fort St Jean;

1943: the German occupation

Today: contemporary period with the construction phases of the MuCEM (time lapse).

B. 2.4 Project Phases

VJ-FSJ Project was conceived in twelve phases (research, concept, design, development and production).

Phase 0. Research; Phase 1: Initiation, preliminary ideas and evaluation of solutions; Phase 2: Preliminary proposal for Exhibit, scenography, technical solution and content layout; Phase 3: Conceptual Content Desing, Pre-production (virtual

storytelling and digital narrative); Phase 4: Implementation of prototype sample (Exhibit and Content); Phase 5: Planning, Scheduling, Management; Phase 6: Final exhibit design, scenography and tech solutions; Phase 7: Final content development, story board and Pre-production analysis; Phase 8: Final exhibit and scenography design with feasibility studies for tech system solutions; Phase 9: Installation on site of technical system solutions, system integration of mixed media installations, customized display systems, 3D printed models with all devices, etc.; Phase 10: Final Content Production; Phase 11: Content and system integration in exhibit components on site; Phase 12: Final exhibit set up (Testing, debugging, resolving defects and stabilization).
Project Closure and Exhibit OPENING!

2.5 Accomplishment and project current stage

Phases 0 to 4 were completed during IméRA research residence. Phases 5 to 9 were completed by the author of this paper under the direction of the Musée des Civilisations de L'Europe et de la Méditerranée (MuCEM) that had commissioned Franz Fischaller to accomplish the said tasks. Phases 10 to 12 are currently ongoing and being carried out by and under the direction of the MuCEM.

III. THE EXHIBIT: CONCEPT, DESIGN, CHALLENGES AND SOLUTIONS

3.1 Concept

VJ-FSJ project was conceived to deliver the design of a permanent exhibit representing the history and evolution of Fort Saint-Jean with focus on five Historical periods, offering visitors a holistic audio visual multilayered journey - through key historical moments that shaped the history of Marseilles [24]. The design combines digital content with mixed media installation, technology and tools embedded in real and virtual architecture [25].

3.2 Time&Space Media Exhibit

Exhibit Design and scenography, tech solutions, media installations, projection and display systems:

3.2 a) Exhibit Space: Galerie des Officiers FSJ – MuCEM

The exhibit has been designed ad hoc for the Galerie des offices located in FSJ, a linear structure articulated by seven rooms, and an open walkway. The rooms are arranged one beside the other connected through a one way only front open corridor (entrance and exit) with a view to the old port of Marseilles. Total area of the exhibit space: 155,76 m², public circulation area: 85,7 m², backstage area: 70,06 m². Each room has a useful area for the public ranging from 15 to 22 m² maximum. In room O.01 to O.04 is installed a fix showcase occupying half of the entire room. In Room O.05 are installed four columns in with historical artefacts are exposed and from this room the public can enter to Room O.06 and Room O.07.

Fundamental challenges encountered in the exhibit space.

The nature and character of the Galerie des officers in addition to other factors inherent to the exhibit space presented several challenges and problem to solve in order to obtain coherent, aesthetic and efficient design solutions.

The rather small size of the rooms and the disposition of their arrangement one beside to each other gave very little

possibility to generate an open passage for the public and to host all necessary devices and technical equipment as it was designed in the initial project-phase.

The Galerie des officers had preexisting installations, showcases and scenographic devices not possible to remove. The request of the MuCEM was to design, adapt and integrate the VJ-FSJ project design solutions to the existing setup of the rooms. This elements increased the challenge and has generated great limits for the design conception, including the setup of projection and display systems.

A major concern was related to the only one access to the exhibit area through the corridor along the front of the 7 rooms, that was entrancing and exit at the same time. This represented other added limits, including visitor circulation and the arrangement of the distribution for the content and storytelling based on the selected historical periods in each room.

Another constrain has been the lighting, as the room-windows and doors are exposed to the south, and the glass wall of the existing showcase gets all its reflection. This problem calls for a specific solution in order to create the right illumination to be able to have the right quality for the visualization in the rooms and its projection area.

Notes, comments

The most suitable solution for the visitor circulation would have been to reverse the setup toward the backside of the showcases and to create only one entrance connected to a continuous open corridor that conducts from one room to the other with the exit at the end of the rooms and connect back to the main corridor under the arches of the Galerie des officers. However, on the view that this solution would have been more expensive, the proposal has been discharged and it was decided to keep the existing circulation system and using the main corridor entering and exiting from each single room one at the time.

Being Marseille is a multicultural and multi linguist town, it has been decided to create only visual titles and NO spoken text to avoid any problem for the language.

Based on the tight proximity of the rooms a special audio system had to be installed to avoid sound overlapping and superposition of the acoustic environment.

3.2. b) Design, scenography and technology: Room 1 to 7

For each room has been designed specifically technological setting and installation seamless, integrated within the architectonic framework, required for the projection and visualization of the digital heritage content.

ROOM O.01

- Front video projection on the back wall (300x196cm), plasterboard painted dark gray;
- Retroprojection video (280x40cm) on polymer film stuck stiched on the vetrin from the inside: placement height according to the glare of the children;
- 3D printed landscape model in the size of 320x170 cm and 10 cm high, centered at the elevated groundfloor in front of the screen with vertical Video projection on the model;
- Framing vision and cache by boxes at the top and bottom of the window, clad with MDF in black.

- 3 Videoprojectors - HD PANASONIC PT-RZ670, LENTILLE ULTRA WIDE ANGLE - Panasonic 0.38-0.40:1 - ET-DLE030, 4mm thin Transparent Polymer GLASS x retroprojection (Size: 280x40cm); Super player 4K Datapath x4, audio: Yamaha ma2030.

ROOM O.02

- Front video projection on the back wall (300x196cm), plasterboard painted dark gray;
- Framing vision and cache by boxes at the top and bottom of the window, cladding with MDF in black;
- 1 Videoprojector – HD – PANASONIC PT-RZ670, Wideangle Lens 0,7; Super player 4K, audio: Yamaha ma2030

ROOM O.03

- 3D printed model of Fort Saint Jean 280x157 cm on the 50 cm high platform in the back of the preinserted showcase;
- Double video projection in panorama on screens (600x134 cm) arranged at 90° and inclined;
- Framing vision and cache by boxes at the top and bottom of the showcase, covering material;
- 2 Videoprojector - HD PANASONIC PT-RZ670; LENTILLE ULTRA WIDE ANGLE - Panasonic 0.38-0.40:1 – ET-DLE030; Super player 4K Datapath x4, audio: Yamaha ma2030;

ROOM O.04

- Front video projection (300x196cm) on inclined wall at the back of the room with HD PANASONIC PT-RZ670; LENTILLE ULTRA WIDE ANGLE - Panasonic 0.38-0.40:1 – ET-DLE030; Super player 4K Datapath x4, audio: Yamaha ma2030;

ROOM O.05

- 4 Glass-vitrines distributed in the room that host the only 4 physical (originals) historic artefacts.

ROOM O.06

- 3 video panoramas made of 12 vertically installed 12 "video monitors LCD 55" Seamless – 3.7 mm BEZEL on an independent structure in front of the existing showcases; Total image resolution: 12960x1920px; Super player 4K, Datapath DL8 and 3 Datapath x4, audio: Yamaha MT3 and 4 Yamaha VCX3 F;

ROOM O.07 (Tunnel 15 mt)

- 4 Holographic projection system (Pepper's Ghost) made of 4 self-supporting metallic modules (Element Z) integrating each 1 Monitor LCD 75" - SAMSUNG ME75B mounted at the upper part and reflecting on the Beamsplitter (70/30) at 45° in the size of 115x200cm; arranged in the tunnel at a distance of 250 cm each; the 4 layered projected "magic illusion" is visible by small openings in the door. The video sequences are distributed on the Super player and the 4K Datapath x4.

All rooms ROOM O.01 to O.06 are cached by boxes cladded with MDF painted in black at the top and bottom of the existing structures to frame the vision to each specific projection system to create a feeling of immersivity.

SOUND REINFORCEMENT SYSTEM: Audio Digital Matrix 8 IN – 8 OUT, Multichannel Power amplifier – 8 OUTput, Loudspeakers Wall Mount, Mediaplayer Audio 2 CH.

AUDIO/VIDEO CONTROL SYSTEM: All audio-visuals are connected to a server to be able to comand the entire setup of the sequences of the different areas of the exhibit. Network Integrated Controller, RS-232 ports/IR/Lan/I-O7Web server, Power Suply, Tabletop Touch Panel 10", Power Supply, Rack Mount Switch – 24 Ports, Customer Application Software Plus Graphic Mask, Steel Enclosure Rack.

Air conditioning: 2000m3/h, Power of 6.2KW, exhaust duct passage in existing false floor.

3.3 FSJ-Digital Animation-Script & Storyboard: Concept and content design (Digital Narrative, storytelling, Video, 3D digital animation and video mapping on 3D printed models)

3.3.a FSJ-Digital Animation-Script & Storyboard

Script and storyboard Sequence Description

PERIOD I - 49 BC

Room O.01 - Time: 3 min, 4 Sequences (SQ)

SQ.1: *The birth of the Avatar Massalia* [M]

Scene 1: The raising of [M]; Scene 2: [M] fly away

SQ.2: *The Greek in Marseilles*

Scene 1: FSJ Book; Scene 2: FSJ Book: The gateway; Scene 3: Arrival of the Greeks from Minor Asia in the shore of Marseilles (Massalia); Scene 4: [M] explores the landscape of Marseilles; Scene 5: The Greek urbanize Marseilles - 6th century B.C., Greek boats in Marseille

SQ.3: *The Siege of Marseilles (Massilia)*

Scene 1: The conquest of Massalia by Julius Caesar (Siege of Marseilles)

Scene 2: Romans In Marseilles

SQ.4: *Marseilles before the 1423*

Scene 1: Fly through Marseilles before the 1423

Scene 2: [M] is sealed

PERIOD II – 1423

Room O.02 - Time: 3 min, 4 Sequences (SQ)

SQ.1: *The chains of the port of Marseille*

Scene 1: [M] introduces the story of the chain of the port of Marseille

Scene 2: Simulation of the chain

SQ.2: *The conquest of Marseille by the Aragonese*

Scene 1: The Aragonese destroy Marseilles

Scene 2: The chain "travels" to Spain

SQ.3: *Marseille rises from the ashes*

Scene 1: Marseille emerges from the ashes after destruction

SQ.4: *Le prêche de Marie Madeleine*

Scene 1: FSJ Digital Storytelling (Painting: Le prêche de Marie Madeleine anonyme provençal)

PERIOD III - 1660

Room O.03 - Time: 3 min, 3 Sequences (SQ)

SQ.1: *Marseille appropriation by Louis XIV*

Scene 1: Capture of the City by Louis XIV

Scene 2: The tower of Fanal is constructed

SQ.2: *Virtual Journey through time and space*

Scene 1: Navigation Through time and space

SQ.3: *The Creation of the Forth Sean Jean (FSJ)*

Scene 1: The raising and construction of FSJ

Scene 2: L'entrée du port de Marseille - FSJ Digital Storytelling (Painting: Claude Joseph Vernet)

PERIOD IV - 1943

Room O.04 - Time: 3 min, 2 Sequences (SQ)

SQ.1: The eighteen century ... A glance to FSJ ... "End or middle of the 19th to the 20th century"

Scene 1: Transformation, evolution, changes

Scene 2: The canal and the Pont à Transbordeur built between 1903 to 1905, from the 19th to 20th century - the Canal Saint Jean from the old harbour to the Joliette harbour ... new opening – orientation of the city

SQ.2: The second world war ... FSJ, Marseilles

Scene 1: Germans occupy Marseilles

Scene 2: Damage in FSJ and the City of Marseille

Room O.05 - Totem 1, 2, 3 and 4 - Historical Objects (Selection by Myriame Morel) **NO ANIMATION**

Room O.06 - Time: 2 min. - 1 Sequence (SQ)

SQ.1: TIMELAPS of J4, Timelaps Construction of the MuCEM (J4)

Room O.07| Tunnel - Time: 2 min. - 4 Sequences (SQ)

SQ.1, 2, 3 and 4: Time laps Period I, II, III and IV

All 4 scenes are combined to one Unique Animation in 4K resolution distributed on 4 transparent screens

TRANSITION Room O.01 – O.04 - 30 sec. each

[M] flying from left to right with blur effect in the background (flash-fwd to next Period/room)

Animation TOTAL Time: 19:30 min.

3.3.b Content distribution, narrative walk through, visitors experience

In Room 1, 2, 3, and 4 the content of 49 BC, 1423, 1660, 1943 is projected through video, animation, simulation. Room 1 and 3 host video mapping on 3D printed models. In room 5, glass-columns are installed containing four physical, historical artifacts integrated in to a digital scenography, room 6 (contemporary period) display the time lapse of the construction of the new Building of the MuCEM on a 360° set-up of vertically positioned screens while 4 holographic displays are installed in room 7 (Tunnel) representing the journey through the four historical periods of the FSJ, namely FSJ through time and space.

The digital content is synchronized in sequences in and throughout the rooms. Each sequence lasting 3 minutes with a 30-second video transition with a countdown, provide the necessary time for the visitor to walk in to the following room, experiencing a continuous flow through the narration of the content projection. Each room within the gallery presents a different technological setting and installation, however the design has been conceived as a continuous and interconnected holistic installation. The content is presented in a continuous fluxus throughout the different rooms equipped with platforms, technical systems and devices, allowing digital content visualization, 3D mapping projection, holographic imaging augmented reality effects, and optical illusions through real and virtual architecture. The content approach

envisage a metaphoric interconnection between the rooms bringing into play multi-layered audio visual narratives, relating and integrating the selected historical periods and invoking a chronological lineal storytelling and driven historical walk-through.

IV. PROJECT DESIGN: IMAGES, ILLUSTRATIONS



Fig. 2. MuCEM and FSJ. Photo: MuCEM.

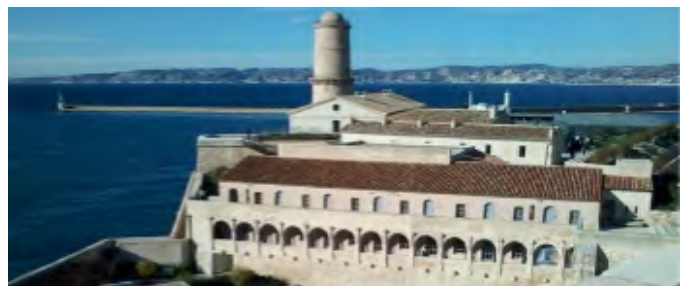


Fig. 3. Galerie des Officiers, FSJ - Exhibit Space. Photo: MuCEM

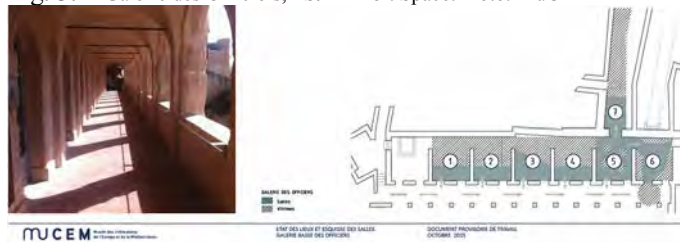


Fig. 4. Galerie des Officiers-entrance+ corridor to exhibit. Photo: MuCEM

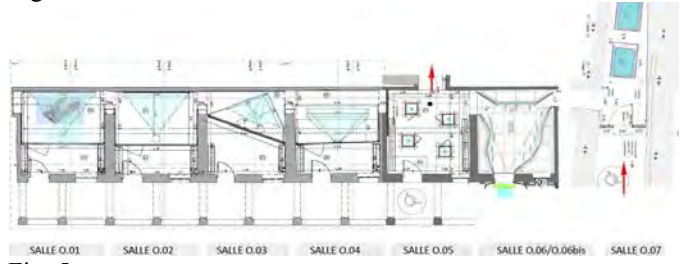


Fig. 5. Historical periods and distribution in rooms O.01 to O.07 (tunnel)

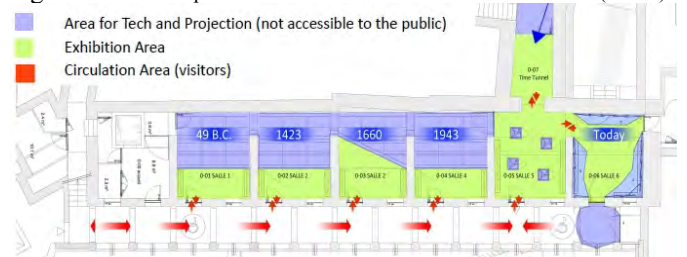


Fig. 6. Plan of circulation for the visitors in Exhibition Area

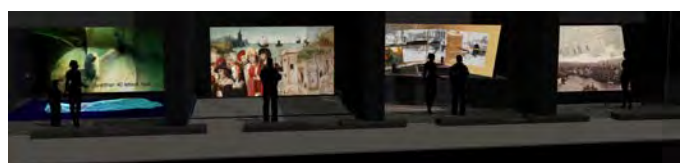


Fig. 7. ROOM O.01, O.02, O.03 et O.04, Galerie des Officiers. Simulation.



Fig. 8. ROOM O.01 Avatar Massalia flying through historical narrative

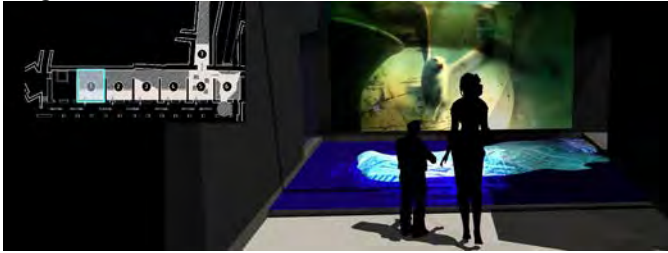


Fig. 9. ROOM O.01- Exhibit design and scenography setup



Fig. 10. ROOM O.01 - Tech solution for projection and display systems

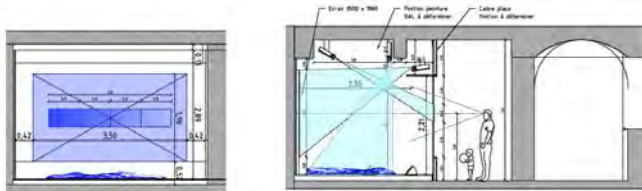


Fig. 11. ROOM O.01 - Floor plan+tech for mixed projection display systems

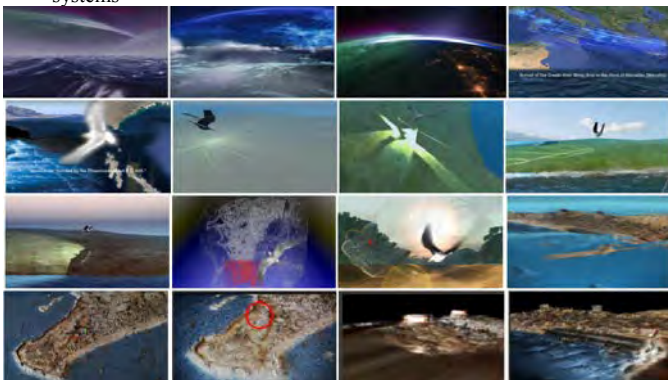


Fig. 12. ROOM O.01 - Concept and content design, digital narrative, storytelling of Period I (Renderings and snapshots)

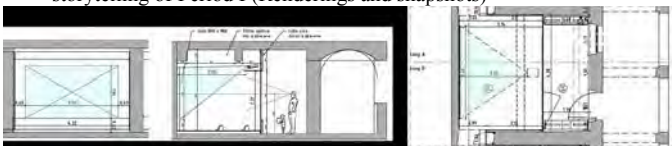


Fig. 13. ROOM O.02 - Floor plan+ tech solutions for display system



Fig. 14. ROOM O.02 - Exhibit design and scenography setup

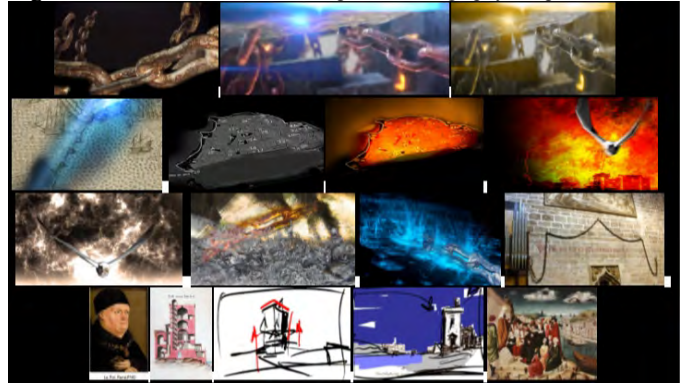


Fig. 15. ROOM O.02 - Content design Period II Renderings and snapshots



Fig. 16. ROOM O.03 - Exhibit design, scenography and setup



Fig. 17. ROOM O.03 - Content design Period III, scenography and setup

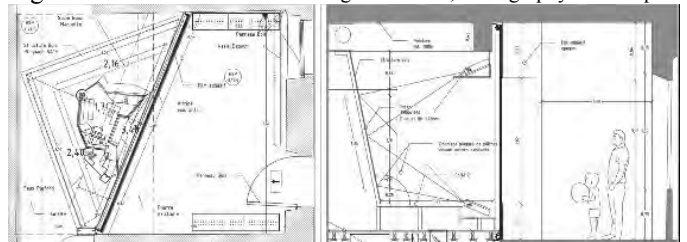


Fig. 18. ROOM O.03 - Floor plan+ tech solutions for display system



Fig. 19. 3D printed model A: 210x190x30/54 cm, with special led lighting system integrated inside the model. Photo: UNIRC



Fig. 20. FSJ 3D printed model implemented by the Università degli Studi "Mediterranea" di Reggio Calabria (UNIRC); Material: polyurethane - PU H.D. 160 Kg and gypsum; Photo: UNIRC

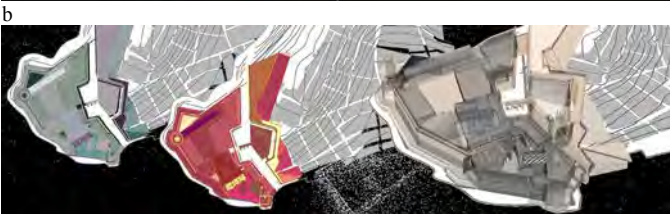


Fig. 21. ROOM O.03 - Renderings (a, b, c, d) concept and content design

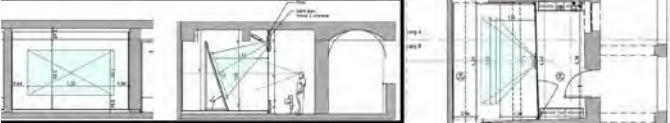


Fig. 22. ROOM O.04 - Tech solutions and display systems setup - Top- and side view



Fig. 23. ROOM O.04 - Scenography design and setup



Fig. 24. ROOM O.04 - Concept and content design Period IV

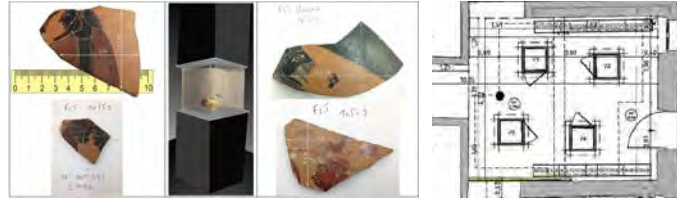


Fig. 25. ROOM O.05 - Glass-vitrine for real historic artefacts, Photo: MuCEM - (LX) - ROOM O.05 - Floor plan (RX)



Fig. 26. ROOM O.06 - Exhibit design and scenography setup



Fig. 27. ROOM O.06 - Tech setup

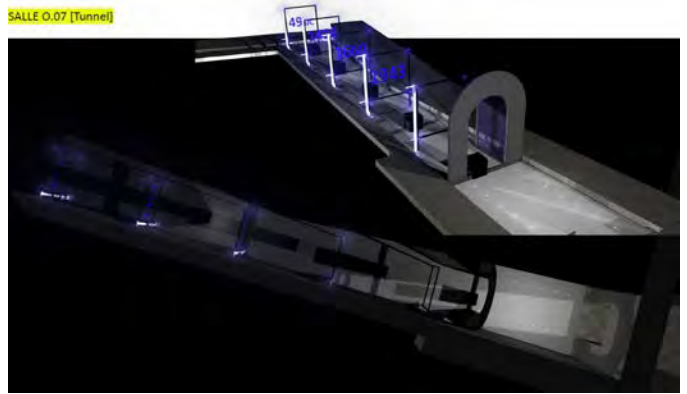


Fig. 28. ROOM O.07. Tunnel Exhibit Design and scenography setup

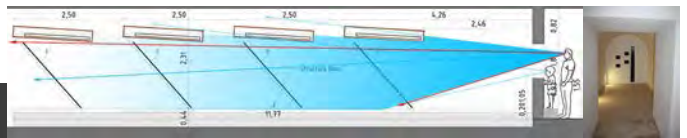


Fig. 29. ROOM O.07 - Side view display systems setup and entry view

CONCLUSIONS AND LESSONS LEARNED

This research and the design of the VJ - FSJ project as a case study has enriched and provide me for a more fertile and knowledgeable groundwork that I expect, will aid me to lead my ongoing research and design projects in the related fields with more awareness and know how.

A major challenge in a research is usually time, this was also the case in this project. Regardless the short term provided to

deliver the project, specifically, phases 5 to 9, the expected outcome was delivered on time and with the quality requested, fulfilling all the premises the objective demanded.

A key challenge in a research is usually time, this was also the case in this project. Regardless the short term provided to deliver the project, specifically, phases 5 to 9, the expected outcome was delivered on time and with the quality requested, fulfilling all the premises the objective demanded.

A major challenge faced in this project was to build an efficient approach to work with the museum organizational structures, their method and model the practice to develop their exhibitions. This had imply to add a considerable time investment from my side, that I had incorporated in the existing project development time line.

It's true, and I agree with the experts view that , that no single overall exhibition-making structure guarantees the production of high quality, cost effective and timely exhibitions, but some models can work better than others in specific situations an upon the nature, typology and scope of the exhibit.

Furthermore, I do also agree that: It is crucial to select an appropriate model for any exhibition project paying attention and to the nature and characteristic of the exhibition, the expertise, and availability of staff, but this imply that the museums need to keep flexibility to accommodate the diverse nature of exhibition projects and their requirements. In the past 20 years, the organizational structures and processes used to create exhibitions have undergone major changes. These changes are, in part, due to transformations within traditional museums, the emergence of new types of museums, and museums' responses to societal changes. Traditional, collection-based museums have experienced increased professionalization and specialization among staff, pressure to include more complex exhibition technologies and approaches within exhibitions, and deliberate efforts to incorporate education personnel in exhibition planning. Nevertheless, more research is needed concerning the total gestalt of museums, the ways in which exhibitions are made, and the quality of exhibitions. It is not sufficient to consider these components in isolation. Research should also seek to understand how structures, roles and processes play in the maintenance of the status quo. And, research should seek to discover how changes in these three areas are likely to affect employees' behavior and resource flows [26].

This paper can be considered as one input in this continuing process or research and design. It is not a blueprint of 'how to do it', but I hope that it offers some useful areas for reflection that the insights in this project research and case-study can deliver meaningful insights and to contribute to what is already a robust cross disciplinary research and practice, already taking place within the field of cultural heritage, specifically to what related to the effectiveness and creatively use use of the boundless potential of the digital medium and technology that are providing context and growing possibilities for experimentation and approaches for the enhancement of DH experiences, initially for less-experienced researchers and practitioners in the field of interest.

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