

FUNDÃO ARCHAEOLOGICAL MUSEUM

EDUCATIONAL GAME



Beira Interior University
and
Fundão Archaeological Museum

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Fundão Archaeological Museum

Educational game

Developed within project

***EduGame: Innovative Educational Tools for Management in Heritage
Protection - gamification in didactic process***

**Co-funded by the Erasmus+ Programme of the European Union
Key Action 2: Strategic Partnership Projects**



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Introduction

The game was articulated and developed between the Museum and the University of Beira Interior, given the specificities of Portuguese legislation, which requires the presence of archaeologists in various heritage recovery and preservation projects.

Museums in Portugal have officially seen their role in the area of education assume more and more preponderance, currently being an important presence in school projects and in the promotion of educational partnerships with the different levels of education in the Municipalities to which they belong and in its areas of influence, as is the case of the Archaeological Museum of Fundão.

1. The Museum

Origins

The Fundão Archaeological Museum, former “José Monteiro Municipal Archaeological Museum”, is a “*museological*” unit that promotes the safeguarding and enhancement of the Material and Intangible Cultural Heritage, historical, archaeological, of the municipality of Fundão. This work is carried out through incorporation, inventory, documentation, conservation, interpretation, study, exhibition, scientific and educational dissemination, promoting the democratization of culture and regional social development. Through its educational services, the Museum makes available and develops programs aimed at the school community and the public, contributing to the knowledge of archeology, history, and cultural heritage of the municipality, promoting its preservation and safeguarding, thus assuming an important role as a thematic, disciplinary and scientific reinforcement. Activities are often carried out (temporary exhibitions, workshops, ateliers, conferences, volunteer programs, archaeological works, etc.) that involve the community, promoting the enhancement, protection and dissemination of its cultural heritage and identity.

The Museum is also responsible for editing the Museum Notebooks, the “*Ebvrobriga*” Magazine, collaborates and edits other editions associated with themes of Museology, History, Cultural Heritage, and Archeology. The Museum is a public service, without legal personality or financial and administrative autonomy, supervised by the Municipality of Fundão. It is assumed as a polynuclear Museum, integrating the following museum nuclei: Interpretive Center of Rock Art of Poço do Caldeirão (CIAR); Castelo Novo Castle Interpretive Centre, and the set of Houses and Places of Feeling – Casa do Barro; Casa do Bombo, the House of Poetry Eugénio de Andrade; the Casa

da Romaria de Santa Luzia, the Casa das Memórias António Guterres, the Casas dos Ofícios, the Casa do Folclore Ilda Valentim, the Casa da Pastorícia, and the Casa da Cereja, in a combination of Material and Intangible Cultural Heritage.

Mission

The Museum assumes the vocation of protecting, identifying, studying, conserving, interpreting, exposing, disseminating, and valuing the Cultural, Archaeological, Historical, Material and Immaterial Heritage of the Municipality of Fundão.

The Museum has the following general objectives:

- Protecting the Historical and Archaeological, Material and Immaterial, Movable and Immovable Heritage of the Municipality of Fundão through systematic inventorying;
- To promote the safeguarding of heritage assets through the coordination and supervision of the necessary archaeological works in works of the municipality;
- Safeguard monuments, complexes, or sites of relevant patrimonial interest, through the instruction of classification processes.

It is regulated by preventive conservation rules and procedures, in accordance with the guidelines of the competent authorities in this matter and the legislation in force.

Location

The Museum is located at numbers 13 and 15 of the “Serrão” Street, an artery that crosses the “Cale” street, one of the most important axes of the so-called “Fundão’s Old Town”.

Fundão, about 20 km south of Covilhã, is located on the northern slope of the “Gardunha” Mountain da and develops along the foothills of the northern slope of Mont of “São Brás”, at altitudes that vary between 550 and 400 meters, in the region traditionally known as “Cova da Beira”.

The building

The Municipal Archaeological Museum of Fundão is a rehabilitated building that comes from a 16th century construction, surrounded by other buildings. In the 18th century, a new body was added to the building, which resulted in the current main façade. The original building was built with prepared granite stones. Inside, the floors, window frames and roof support beams were made of chestnut wood. Its creation resulted from the action of José Alves Monteiro, who promoted the founding of the Municipal Museum, established on October 8, 1942. The Museum opened to the public on June

15, 1947, provisionally, on the ground floor of the Town Hall building, with the Archeology section. In 1965 it moved to the facilities on “Agostinho Fevereiro” Street, on the ground floor of the Casino “Fundanense”.

On September 11, 2003, it was renamed the José Monteiro Municipal Archaeological Museum and would reopen to the public on February 25, 2007, in new facilities, resulting from the rehabilitation works on the former “Solar Taborda Falcão d’Elvas”. Currently takes the name of Archaeological Museum of Fundão.

2. The Game

The game is based after the work carried out by the partners of the EduGame project, made explicit in the document *IO4 - EduKIT - A Guide on Educational Role Play "Management of heritage sites."*

The game, as a tool, allows students to develop a set of practical skills using Perception and Case Studies as methodology to compare and find a solution.

Heritage management and exploring the intangible value on architectural heritage, preservation and reconstruction: heritage, in an architecture course must be contextualized (time, space) and can be understood as a vehicle of persuasion that influences individual taste, linking it to the local culture at a specific time.

By using the game as a teaching and learning tool, future architects are expected to: describe the situation of their case study and to be able to come to conclusions based on the experience, taught, about the different steps they will have to go through to reach a balanced and "correct" solution.

Given the theoretical introduction to the process of learning through play, and considering the current legislation in Portugal, we decided to create a game in which teams of students take the role of the different players in the process of restoration of a building or a space in an area of historical interest, thus dealing with concepts and using completely new languages for students of the architecture course of the University of Beira Interior.

3. Objective of the simulation and general instructions

From the guidelines of *04 EduKit* presented, we see that the general objectives of a Role Player Game (RPG) are:

- involve students, increasing their interest in the discipline.
- put them in the position of having to make concrete choices, applying the scientific knowledge and technical skills acquired during their studies, but also putting transversal skills into play.
- offer students a situation in which to use analytical skills but also that of making shared decisions within the work team.
- let them experience the complexity of a typical situation, in which it is also important to take into consideration the points of view, values, perceptions, and true interests of the interlocutors.

The main question for the role-playing game of the University and the Museum, was the need that students will have to understand the multiplicity of actors involved in the design process: design of the architectural project, the needs, the complexity, and above all the notion of the agents involved, their specific attributions and the timing of their intervention in the process of recovery and approval of a project for the recovery of a building in a classified historic area.

Another important issue after discussion between Museum and University was the need for students to improved, even to acquire, skills to learn how to dialogue, argue and negotiate with the different stakeholders that participate in this type of intervention, ensuring compromise solutions and argumentation with them, with creativity and knowledge, takes a central role in the whole process.

4. Scenario

The game is in the "Fundão old town", in an area covered by the protection perimeter of the Monument of Municipal Interest, the building of Nobre Vaz de Carvalho/ Colégio de Santo António.

A property was selected to be the target of an architectural project to be redeveloped into 3 apartments, one of which with capacity to accommodate people with reduced mobility.

The selected property is a vacant building located at 59/63 Cale Street. From a 16th century foundation, with two floors, it is built in granite stonework. From the memory of the building, we can highlight the former existence of a bakery on the first floor, and, in the immediate vicinity are the house where José Alves Monteiro was born, a prominent figure in the history of Fundão and founder of the Museum and the Noble House Vaz de Carvalho / College of St. Anthony, Property of Municipal Interest.

With the game is intended to be presented an architectural project for the rehabilitation of the building, a process that must be analyzed and instructed by various entities.

5. Phases of the didactic game

The game is divided into 6 phases, where groups of students/students, led by the teacher, should follow these phases as a generic scheme for the development of the game.

These are:

// PHASE 1: Explanation of what is the game: distribution of roles, randomly; signing the roles; creating groups of roles; distribution of tasks, collection of material of the building; material analysis; Conclusions of the analysis phase;

// PHASE 2: Gathering collection of information for each character - learning by doing; role of the institution they represent - needs and obligations; project feasibility;

// PHASE 3: Stakeholder/role player discussion - constraints and situations that may cause the architectural project to change - intermediate phase of the architectural project; Public presentation of the call of proposals and debate;

// **PHASE 4:** Information gathering and strategy formulation collecting/complementary information; preparing the project to be presented to an expert committee; design of the architectural intervention;

// **PHASE 5:** Project presentation - First evaluation by a commission of experts and review of the projects; preparation to the final presentation; preparation to how communicate to clarify doubts of others; changes can be proposed according to current legislation;

// **PHASE 6:** Final presentation of the project, in the presence of the jury, and announcement of the winner

Note that in:

// **PHASE 1**

During this phase, the students by the orientation of the teachers go to research everything they need about the building, the approval process of project like that and, by indication by the teachers, go to see every Portuguese legislation that is applied in historical area.

They go to see how all the process is conduct and how they can manage, communicate, and see the dynamics among the different stakeholders.

After that, they are dived by groups.

Then arrives the moment of divide the roles and to “**play**”.

As proposed during the project sessions a card (digital or in paper), with a description of the character they must play, is given to each member of the group, with a description of the professional profile, the specific area of activity, and the place on the process approval decision of the project, and with, according to the Manual of the game, all the information necessary to the player to make decisions consistent with his role.

Each of the students must research, analysis and discuss in the group and with the teachers the best they can to real assume their character thoroughly.

Before the game the museum and the students/teachers considering the type of intervention intended, and the legislation, find the following characters.

Thus, those in the game are made up of the players who participate in a process of instruction and approval of an architectural project in an area of historic interest, which in this case are:

1. Museum Director
2. Director of the General Directorate of Cultural Heritage
3. Head of Division of Urbanization, Planning and Quality of Life
4. Head of Division of Urbanistic Management of the City Council of Fundão
5. Architect
6. Museum Archaeologist
7. Owner of the building/project

So, the cards created for each character were:



Role1: Museum Director - Pedro Reis - 53 years old, archaeologist.

Manages the Museum (Polynucleated) according to the mission of the museum institution.

He analyzes public and private projects (in areas of heritage protection). His opinions are not binding but are in accordance with the legislation in force and his professional experience.

He coordinates the team associated with the Museum, which includes 2 more archaeologists and 2 archaeologist assistants.

They carry out archaeological interventions of the public works of the municipality of Fundão and are informed of all private archaeological interventions to be carried out in the municipality.

They can be called by the municipality or by Directorate General of Cultural Heritage - DGPC to accompany inspection actions in private works.

**Manuel Abecassis,
57 anos, Historian**



The Directorate-General of Cultural Heritage is a central service of the direct administration of the State that "has the mission of ensuring the management, safeguarding, enhancement, conservation and restoration of the assets that make up the immovable, movable and intangible cultural heritage of the country, as well as developing and implementing the national museological policy."

It has a large team, covering practically all technical and scientific fields.

The instructional process of architecture begins with the DGPC's evaluation of both the architecture, the alteration of the existing building, and the materials used. The decisions issued are binding. Changes may be requested to the project, or archaeological work, which must be carried out before and during the work. The archaeological procedures carried out are also subject to inspection and approval by this institution.

Role 3: Head of Urbanism Division of the Municipality of Fundão - Carla Seródio -50 years old, Architect

Responsible for the urban management of the municipality, namely the observation of compliance with the Law and regulations of the urban activities in the municipality. Her mission is the supervision, programming, organization, coordination and integrated direction of all the functions of administrative nature reported to the areas of Spatial Planning and Urban Management, or related to them, in particular the actions of verification and control of all the documentation supporting the administrative processes under the Legal Regime of Urbanization and Building, other special or complementary legislation as well as specific regulations.

Proceed to the analysis of the architectural project after being analyzed by the DGPC. Its analysis has a binding character.



Role 4: Head of the Land Use, Planning and Quality of Life Division,

Rui Mendes - 52 years old Basic Civil Engineer.

Responsible for the urban management of the municipality, namely the observation of the conformity with the Law, Plans and other planning instruments, of the urban activities in the municipality.

Project analysis - municipal regulation of the old district of Fundão - binding character



Role 5: Private Architect - Luis Sousa - 47 years old.

Base training architect.

The architect is a professional who makes plans, designs and builds spaces so that they are useful for human use, such as houses, buildings, public or private agencies, squares and among other more. The field of architecture expands into urbanism, landscaping, and various forms of design. Responsible for the project

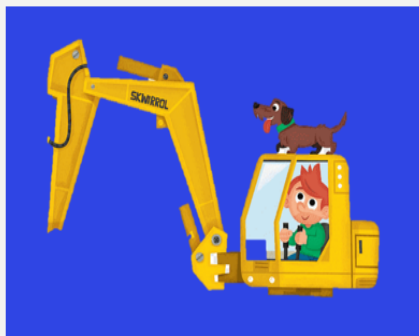


Role 6: Municipal Archeologist - Nuno Pardal - 48 years old. Archeologist by training.

Participates in the management of works with the component of archeology, making known the scope of archeology in the contractual areas of a construction and/or rehabilitation work and presenting an archeological plan, as an indispensable tool for management - Analysis of the archeological heritage safeguard - advisory character.



Building Owner . Heavy Machinery Worker
António Silva - 62 years old



António Silva recently returned to his homeland: he emigrated young to Canada in search of a better life and invested part of his money in a house on Cale Street, which he intends to redevelop into three apartments that he will rent out.

He has a nephew who had a motorcycle accident and became paraplegic. For this reason, he wants the apartment on the first floor to be accessible to people with disabilities..

// PHASE 2:

All necessary information is available on the web pages of the DGPC and the Municipality of Fundão.

the websites are provided to the students as well as additional bibliography that allows them to elaborate the project and to assume the different roles, which have their own legislative and normative specificities.

// PHASE 3:

All the partners meet to discuss how the project should incorporate what each one does.

Under the supervision of the teacher, debate, and negotiation, within the legislative norms in force, will result in a set of rules and requirements that the project must be subject to and comply with. The intermediate phase of the architectural project starts to be made.

// PHASE 4:

All the students approach teamwork, and apply skills such as collaboration, active listening, mediation, negotiation, and division of work to do the project according to the previous phase. During this activity, they also must find the information necessary to present a complete project.

// PHASE 5:

A commission, made up of the teaching staff, is created and the students, as a group, present their project ideas to it. In this phase all students can intervene by making observations to the other project groups, based on the knowledge acquired by interpreting their role.

// PHASE 6:

The students prepare a presentation for the final debate and will present their projects (on site or remotely) and will have a final opportunity for discussion. At the end, the panel of judges, in this case made up of 3 professors and a member of the museum, elects announced and the winning project.

6. *Final considerations on the learning process*

At the end, it is necessary to have a moment for evaluation of the activity by students and teachers so that recommendations can be found for the whole process to be monitored and the game can be refined as a student-centered learning process.

7. *Pilot Implementation in UBI*

The game was tested in the 4th year urban design class of the integrated master's degree in architecture under the regency of professor Cláudia Beato with the evaluation commission composed by professors Cláudia Beato, Luís Pinto, Ana Martins and André Mota Veiga, as the museum's representative.

It should be noted that professor Luís Pinto with 2nd year students, also tested the game of which photos are also presented.

Role Play assumed in each group

Each member of the group assumed the role previously drawn.

Regarding the material for the foreign students, since 14 students participated as additional collaborators, 6 of them from Slovenia, 2 Czech Republic, 2 Spain and 2 Brazil, the necessary documentation is available in the governmental portals and in the City Councils in Portuguese and in English, as shown in Figure 1 and 2.

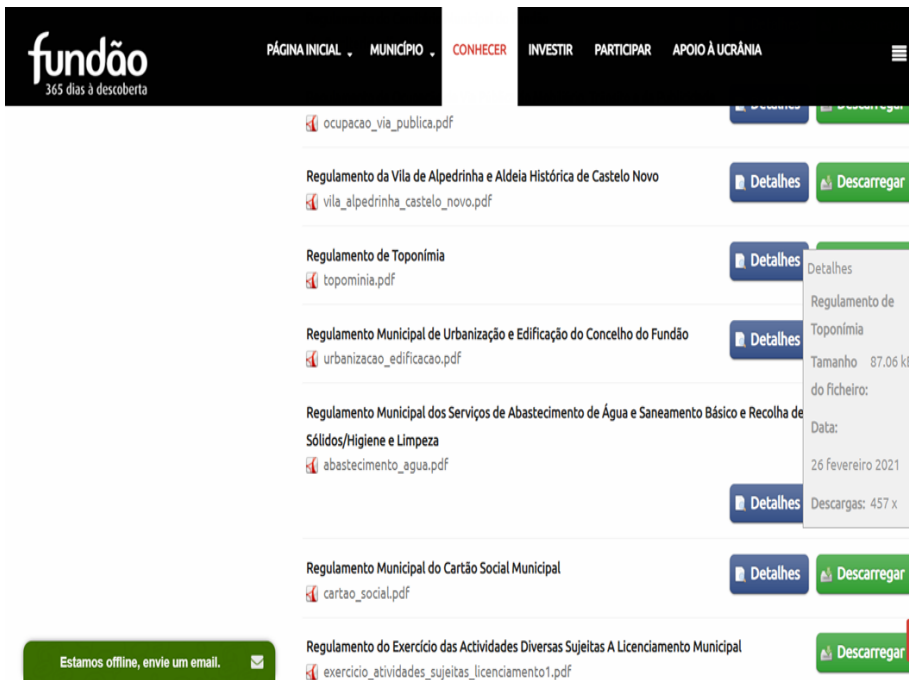


Figure 1 - Fundão Municipality (2022)

The roles players assumed were, according to Portuguese legislation and in view of the location, the proposed scenario of intervention - Historic Centre of Fundão subject to the corresponding restrictions for being in an area covered by its own planning figure. In fact, the C game is in the Historic Area of Fundão, in an area within the protection perimeter of a classified building.

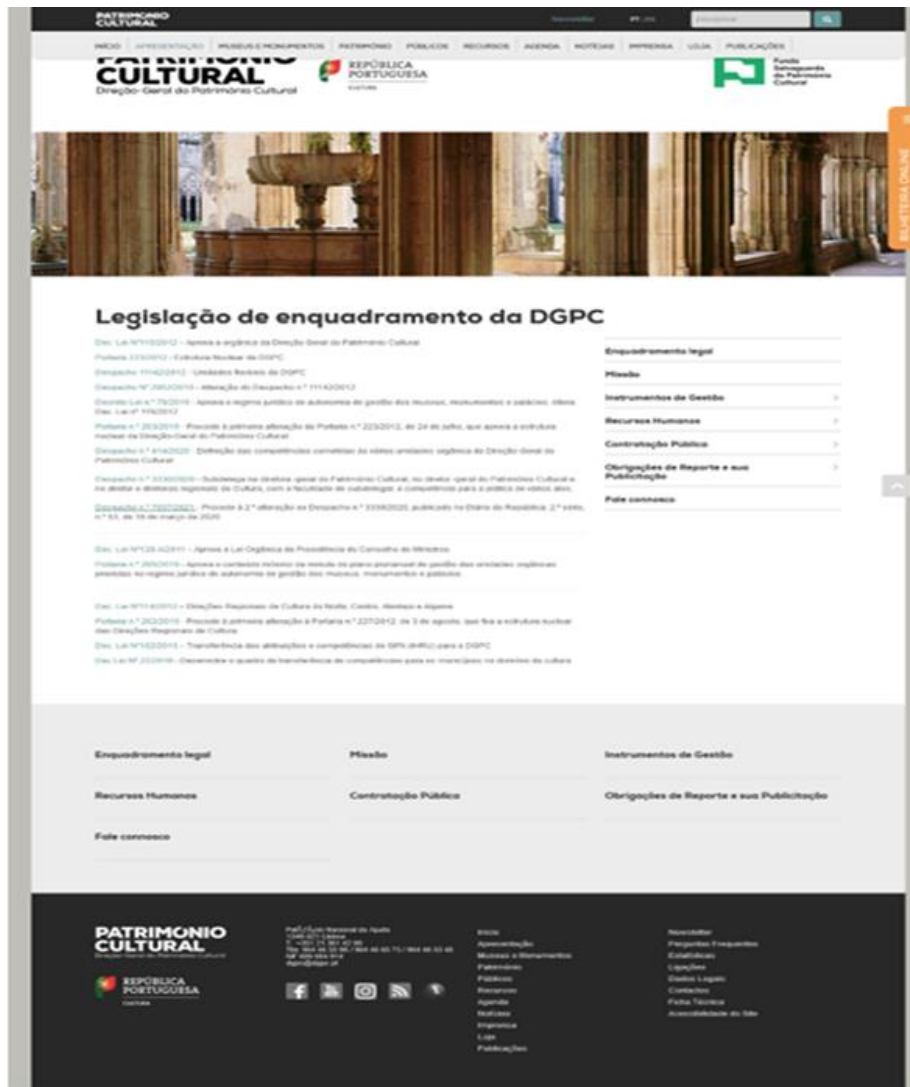


Figure 2 - Portuguese Government Portal - General Management of Heritage (2022)

It was chosen by the teacher a building to be the target of requalification for a residential building, in this case a small vacant building, located in Cale Street (one of the most characteristic streets of Fundão), from the 16th century, with 2 floors, built in granite stonework (Figure 3).



Figure 3 - Small 16th century dwelling in the historical center of Fundão

The game intends to present an architectural project for the rehabilitation of the building, a process that must be analyzed and instructed by several entities. In this case the characters needed for the instruction of the process were detected by the students as being 7. It was not explored, but it was discussed that, in case of need due to the number of players, another role could be added - an element of the public that could belong to a local organization of cultural protection. A group of students, made up of those who missed some classes, was always researching and collecting elements for all groups. The final objective is the feasibility of the project for the recovery of the building to habitation.

The game was taking place in 4 classes of 4 hours each, from October (the 24 and 31) and November (the 7 and 14), of 2022.

Lectures	24 October	31 October	7 November	14 November
Phase 1				
Phase 2				
Phase 3				
Phase 4				
Phase 5				
Phase 6				

Character types assumed in each group

In accordance with the legislation in force in Portugal, complemented by regulations and plans of a Municipal nature, the following characters were taken into account:

a) Role Play 1: Director of the Museum - Pedro Reis - 53 years old, archaeologist.
Manages the Museum (Polynucleate) in accordance with the institution's mission. Analyzes public and private projects (in heritage protection areas). Their opinions are not binding but are in accordance with current legislation and their professional experience.

He coordinates the team associated with the Museum, which includes 2 archaeologists and 2 archaeologist assistants.

They carry out archaeological interventions in public works in the municipality of Fundão and are informed of all private archaeological interventions to be carried out in the municipality.

They may be summoned by the municipality or by the DGPC to monitor inspection actions in private works.

b) Role Play 2: Director of the General Directorate of Cultural Heritage - Manuel Abecassis, 57 years old, Historian

The Directorate-General for Cultural Heritage is a central service of the direct administration of the State whose mission is to ensure the management, safeguard, enhancement, conservation and restoration of assets that make up the immovable, movable and intangible cultural heritage of the country, as well as to develop and execute the national musicological policy." It has a broad team, covering practically all technical and scientific domains.

The instructional process of architecture begins with the assessment by the DGPC, both on the part of the architecture, the alteration of the existing building or the materials used.

Decisions issued are binding. Changes to the project or archaeological work that must be carried out before and during the work may be requested.

The archaeological procedures carried out are also subject to supervision and acceptance by this institution.

c) Role Play 3: Head of the Urban Planning Division of Fundão City Council - Carla Serôdio - 50 years old, Architect

Responsible for the urban management of the municipality, namely for observing compliance with the Law and regulations of urban activities in the municipality. Its mission is either the supervision, programming, organization, coordination and integrated direction of the staff and activities of the respective services, or the coordination of all functions of an administrative nature reported to the areas of Spatial Planning and Urban Management, or with them related, in particular the verification and control actions of all supporting documentation for administrative processes under the Legal Regime for Urbanization and Building, other special or complementary legislation, as well as specific regulations.

Proceeds with the analysis of the architectural project after being analyzed by the DGPC. Its analysis is binding.

d) Role Play 4: Head of the Organization, Planning and Quality of Life Division,
Rui Mendes - 52 years old Civil Engineer with basic training.

Responsible for the urban management of the municipality, namely for observing compliance with the Law, Plans and other planning instruments, of urban activities in the municipality. Performs the analysis of the project in accordance, namely, with the municipal regulation of the old zone of Fundão - binding nature, and other regulations and instruments of territorial management.

e) Role Play 5: Private Architect - Luís Sousa - 47 years old.

The architect is a professional who makes plans, designs and builds spaces so that they are useful for human use, such as houses, buildings, public or private bodies, squares and among others. The area of architecture expands to urbanism, landscaping, and various forms of design.

In charge of the recuperation project.

f) Role Play 6: Arqueólogo Municipal - Nuno Pardal - 48 years archaeologist

Participates in the management of works with an archeology component, making known the scope of archeology in the contractual domains of a construction and/or rehabilitation work and presenting an archeology plan, as an indispensable tool for management - Analysis of the archaeological heritage safeguard - advisory character.

g) Role Play 7: Owner of the building/project - Heavy Machinery Operator
António Silva - 62 years old

António Silva recently returned to his homeland: he emigrated young to Canada in search of a better life and invested part of his money in a house on Cale Street, which he intends to redevelop into three apartments that he will rent out. He has a nephew who had a motorcycle accident and became paraplegic. For this reason, he wants the apartment on the first floor to be accessible to people with disabilities.

The game applied

The game unfolded, according to the planned phases. To know:

Phase 1 - distribution of roles; functions of each 1; distribution of tasks;

Phase 2 - gathering information for each character - learning by doing; role of the institution they represent - needs and obligations; project feasibility;

Phase 3 - debate between actors/roles - constraints and situations that could affect the alteration of the architectural project - intermediate phase of the architectural project;

Phase 4 - collection of necessary/complementary information; preparation of the project to be presented to a committee of experts;

Phase 5 - 1st assessment - project presentation;

Phase 6 - preparation of the final presentation; how to make the final presentation and how to communicate to clarify doubts from other players - final presentation of the project; other players also present what they have done/proposed changes in accordance with the legislation in force.

Peer review. committee composed of 3 colleagues and a member of the museum.

The phases took place normally, with some difficulty at first, as they did not have much knowledge in the matter, nor did they know the work licensing mechanisms, so they did not know how to assume the different roles, but after overcoming these difficulties, it generated There is a very enriching climate of learning, dialogue and debate, with students studying and assuming their roles in a very “realistic” way.

Students' Evaluation of the Game - main questions

About the students' results and opinions, it should be noted that a short survey was made to the actual members of the game, whose most significant results were discussed by all.

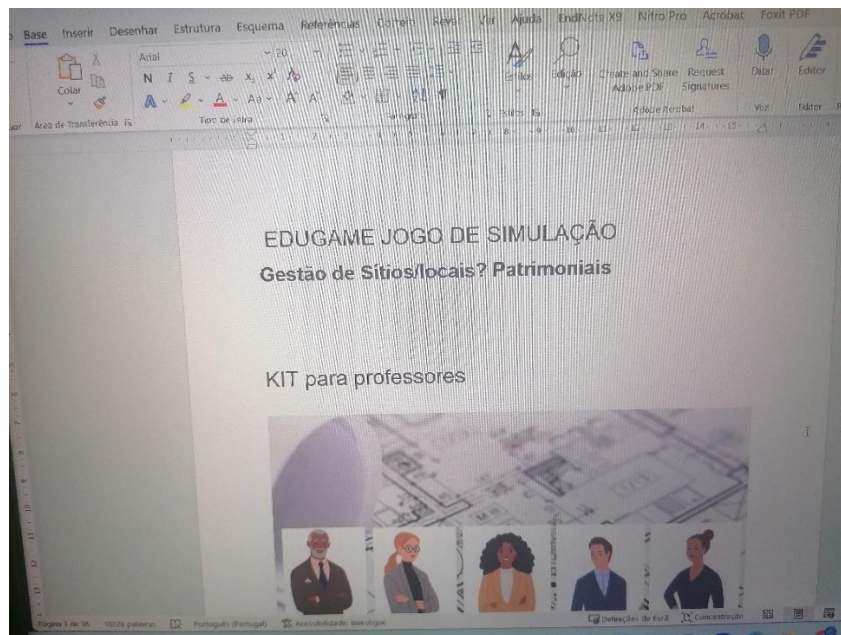
It is worth mentioning that they stated that the activity had been very fruitful because they had:

1. Being in touch with something new - 100%;
2. Being in touch with an innovative and interesting way of teaching - 96.5%;
3. Learned new knowledge useful for their professional practice 100%;
4. They found the exercise very important because it was a learning experience 96.5%;
5. Had difficulties with the new concepts 72%;
6. Would like to repeat this and other curricular units: 100%;
7. They need to know how to better argue with technical terms 96.5%.

Many of all students involved, more than 90% liked the initiative, enriched their knowledge in cultural heritage recovery, but above all, according to the students, liked this methodology that allows a "staging of reality" in the classroom context, thus having a teaching closer to the professional reality they will face.

This issue of learning, playing and recreation of the real scenario, was much debated and considered very important, to which was added a debate on the need to deepen these themes, to incorporate them more in the syllabus and the need to be able to express themselves, discuss and defend a project according to the real constraints they will face in their daily professional practice.

Attachment: Attending students and Photos of the Game





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