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de Viana do Castelo

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Walk Viana – Viana 3D online

Design and communication of historical/heritage information using multimedia
tools.

Integrated Design

Design

Work done under the supervision of

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Abstract

The city of Viana do Castelo has a mixture of architecture that depicts its rich and interesting history and heritage. The project Viana3D has progressed through the years evolving but keeping true to one of its main objectives; to show the architecture¹ of the city of Viana do Castelo using new technologies.

Research and analysis was done on the history of the city of Viana do Castelo and on some of the projects elaborated by Viana3D, as well as the ways that Viana3D shows the work to the public.

This thesis, written in English, shows the evolution of the Viana3D project as well as a compilation of all its achievements so far. The thesis project is a website based on the work done by Viana3D aiming to strengthen its online presence and create new opportunities.

Keywords: *Design, Multimedia, Viana do Castelo, History, Heritage.*

¹ In the case of the Viana3D project, the architecture can still exist, be altered from the original construction or be a proposal never having been built.

Resumo

A cidade de Viana do Castelo tem uma mistura de arquitectura que mostra uma rica e interessante história e património. O projecto Viana3D tem evoluído pelos anos mas mantém fiel à uma dos objectivos principais; mostrar a arquitectura² da cidade de Viana do Castelo a partir das novas tecnologias.

Pesquisa e análise foi feita sobre a história da cidade de Viana do Castelo e sobre alguns projectos elaborados pela Viana3D, bem como a forma que o Viana3D mostra o trabalho ao público.

Esta tese, escrita em inglês, mostra a evolução do projecto Viana3D bem como uma compilação de todas as suas realizações entretanto. O projecto da tese é um website baseado no trabalho elaborado por Viana3D com objectivo de fortalecer a sua presença online e criar novas oportunidades.

Palavras-chaves: *Design, Multimédia, Viana do Castelo, História, Património.*

² No caso do projecto Viana3D, a arquitectura pode ainda existir, pode ser alterado do original construído ou pode ser uma proposta que nunca foi construída.

Dedication

To my family who have always been there for me.

Tudo ou nada.

Glossary of terms, acronyms and translations

A.R. – Augmented Reality (Realidade Aumentada).

C.P. – (Comboios Portugal) The company that operates the trains in Portugal.

C.T.T – (Correios de Portugal) The portuguese postal service.

Design de Ambientes – The undergraduate degree of Urban and Environmental Design that is available at ESTG.

E.S.T.G. – (Escola Superior de Tecnologia e Gestão) is the School of Technology and Management that is one of the schools of IPVC.

F.B. – Facebook.

I.P.V.C. – (Instituto Politécnico de Viana do Castelo) the Viana do Castelo Polytechnic Institute has six schools located in the Alto Minho region that cater to the various areas of study: health, education, agriculture, business, sports and leisure, and technology and management.

Mestrado Design Integrado - The master´s degree in Integrated Design.

V.R. – Virtual Reality (Realidade Virtual).

Index

Acknowledgements	iii
Abstract	iv
Resumo	v
Dedication	vi
Glossary of terms, acronyms and translations	vii
Index	8
Index of images	11
Chapter 1 - Introduction	13
1.1 Methodology used.....	14
1.2 Sources of information	15
1.3 Objectives	16
Chapter 2 - Communication	17
2.1 Written / visual communication	17
2.2 The Digital World	18
2.2.1 The mobile phone evolution	18
2.2.2 The Internet	19
2.2.3 Social Media and Social Networks	21
2.3 New technologies	24
2.3.1 Virtual Reality (VR)	24
2.3.2 Augmented Reality (AR)	25
Chapter 3 - City	27
3.1 Localization	28
3.2 Citânia / citadel.....	29
3.3 The Legend of Viana	29
3.4 Origin of the name – Charter/Foral	31
3.5 Historical evolution of the urban structure of the city	31
3.6 Bridging the river.....	33
3.7 Arrival of the train and construction of the train station	34
3.8 Creation of the main Avenue	35
3.9 Recent Alterations	36
Chapter 4 - VIANA 3D	37
4.1 Origins	37
4.2 Work done.....	39
4.2.1 Exhibitions / Public Displays:	39
4.2.2 Conference / Papers	43

4.2.3 In The News	45
4.3 - Online Presence	46
4.3.1 YouTube.....	46
4.3.2 Vimeo	46
4.3.3 Facebook	46
4.3.4 Google+	47
4.3.5 Instagram	47
Chapter 5 - Case Studies.....	48
5.1 Valença	48
5.2 Porto (Oporto)	51
5.3 Julie Dawn Fox in Portugal.....	53
5.4 Comparison of the case studies.....	55
Chapter 6 – Website.....	57
6.1 Appearance.....	58
6.1.1 Fonts.....	58
6.1.2 Widgets	58
6.1.3 Webpages.....	59
6.2 Content.....	61
6.2.1 CITCOHAB	61
6.2.1.1 The CP Neighbourhood.....	61
6.2.1.2 The story of a corner	65
6.2.1.3 Fuel pump: Coelho & Brandão Garage.....	69
6.2.2 The Altered.....	71
6.2.2.1 Escola da Avenida	71
6.2.2.2 CTT.....	71
6.2.2.3 The Chocolate Factory.....	72
6.2.2.4 Bento Alves house	73
6.2.2.5 Dr. Tomás Meira	74
6.2.3 The Destroyed	75
6.2.3.1 Caixa Geral de Depósitos.....	75
6.2.3.2 The Old Municipal Market.....	77
6.2.3.3 Saint Francis of the Mountain	80
Chapter 7 - Conclusions.....	81
Chapter 8 - References	83
8.1 Books.....	83
8.2 E-Books or PDF	84
8.3 Website or Webpage	85
Chapter 9 Annexes.....	92

9.1 Viana3D published papers	92
9.1.1 As Não Cidades: O Que Poderia Ter Sido E Não Foi	92
9.1.2 Projeto Viana 3d: Veiculos De Comunicação Para O Património Cultural	1
9.1.3 Design's Role On The [Re]Habilitation Of Social And Urban Structure.....	96
9.1.4 No Cities: Design And Strategies Of Communication	97
9.1.5 The Design Of Railway Heritage Built And Not Built And Its Influence In The Design Of The City Of Viana Do Castelo	99
9.2 Newspaper clipping from A Aurora do Lima.....	101
9.3 Interviews of the ex-collaborators and team leader of Viana3D	102
9.3.1 Entrevista com: Manuel Rivas Gulías	104
9.3.2 Entrevista com: Adriano Ribeiro	109
9.3.3 Entrevista com: Micael Miranda.....	113
9.4 The Way of Saint James.....	118
9.5 Questionnaires about the website.....	119

Index of images

Fig. 1 – Timeline showing part of the evolution of the web, social networks and social media.	21
Fig. 2 – Satellite map of the city of Viana do Castelo	28
Fig. 3 – Map of the medieval city with the location of the four gates.	32
Fig. 4 – The two bridges and Viana – the remains of the wooden on the left and the new metallic on the right.	33
Fig. 5 – Map of the city of Viana do Castelo showing the railway line from the train station to the docks.....	34
Fig. 6 The railway station of Viana do Castelo	35
Fig. 7 – A map of the city of Viana do Castelo with various points of interest marked, located on the side of one of the municipal buildings.	36
Fig. 8 – The Viana3D logo is symbolic of the three dimensions that is the basis of how the models are elaborated	37
Fig. 9- 360 render of the CP neighborhood from the center of the model to be viewed in VR.....	38
Fig. 10 - Poster for the exhibition	39
Fig. 11 - Poster of the event.....	40
Fig. 12 - The Viana3D stand at Mostra 2015	40
Fig. 13 - Pictures taken at the 30th Anniversary of ESTG - hologram and QR Codes	41
Fig. 14 - Viana3D stand at the Mostra 2016	41
Fig. 15 - Viana3D exhibition at the Jornadas de Reabilitação Urbana	42
Fig. 16 – Part of the Viana3D stand showing AR and VR at the Job Summit.....	42
Fig. 17 – The Viana3D stand at the Jornadas and the interaction of the public with some of the projects shown	43
Fig. 18 – Screenshots of the Viana3D Facebook page and Instagram profile as seen on a mobile device.....	47
Fig. 19 – The fort of Valença showing the metallic bridge over the Minho river to Tui	49
Fig. 20 – Screenshot of the homepage of the website Visit Valença	50
Fig. 21 – A view of Porto and the metallic bridge over the river Douro	51
Fig. 22 – Screenshot of the homepage of the website goOPORTO	52
Fig. 23 – Screenshot of the homepage of the website Julie Dawn Fox in Portugal	53
Fig. 24 - Table comparing the three different case study websites	55
Fig. 25 - Table comparing social media/networks of the case study websites.....	56
Fig. 26 – Screenshot of the homepage of Viana3D website viewed on desktop	57
Fig. 27 – Header image on the Viana3d WordPress website.	58
Fig. 28 - Font settings on the WordPress.com customizer	58
Fig. 29 – Print screen of website when visited on a smartphone.....	60
Fig. 30 - Top view of the CP Neighbourhood	63
Fig. 31 - Front perspective of the CP neighborhood.....	63
Fig. 32- A comparison of the proposal and the constructed building.....	64
Fig. 33 - 3D modulation of the houses done by Viana3D.....	65
Fig. 34 – The corner before demolition started	66
Fig. 35 – Proposal for the Headquarters for the volunteer firefighters	66
Fig. 36 - Vida por Vida (Life for Life) postcard of the fire station and 3D model.....	67
Fig. 37 - 3D model of the building that could have been constructed.....	67
Fig. 38 – The Courthouse the now occupies the corner of the main avenue	68
Fig. 39 – The Garage Coelho & Brandão with the add-on structure that was never built and what was constructed.	69
Fig. 40 - View of the school with the fuel pump in the right-hand corner of the image	70

Fig. 41 – Render of the Avenue School before the gardens were altered.....	71
Fig. 42 – The CTT building.....	72
Fig. 43 The Chocolate Factory model by Viana3D and the Chocolate Hotel today	73
Fig. 44 – The original building of Bento Alves before the alteratoiin.....	73
Fig. 45- The buildings before the merge, the projected option of the building and the final structure as is nowadays	74
Fig. 46 – Render of the Caixa Geral de Depósitos Viana do Castelo branch original building.....	75
Fig. 47 – The Viana do Castelo branch of Caixa Geral de Depósitos after the alterations (left) and the new.....	76
Fig. 48 – The Municipal Market on market day	77
Fig. 49 – 3D model of the old Municipal Market	79
Fig. 50 – The two proposals for the central pavilion of the market.....	79
Fig. 51 – The Convent of Saint Francis of the Mountain comparison with Viana3D remodeling and how it is today	80
Fig. 52 – Example of the shell that marks The Way of Saint James.	118

Chapter 1 - Introduction

Throughout history when referring to a city, oral tradition /word of mouth was the most reliable source of information to a degree as it was influenced by that person's opinion. Nowadays most people do not merely rely on opinions and advice from others, they prefer to check and find out for themselves. Today research is mainly done online via the internet due to easy access thanks mainly to mobile devices. This in turn means that the information about a city should be available online in a universal language and format that is legible.

The aim of this thesis project is the implementation of design in the creation of a website for Viana3D about the city of Viana do Castelo with attention to its architecture and history. It is mainly directed mainly towards tourists or anyone interested in the city.

The stages to accomplish this thesis project are research, analysis, translations, construction of text and creation of a website to distribute this information along with the work of the IPVC project Viana3D.

The first phase of this thesis project is a deeper analysis of the history of the city of Viana do Castelo with attention paid to the alterations that occurred within the last century that shaped the city into what it is today.

This thesis is written in English as it is the universal language and is aimed at being easily read and understood by anyone who is interested in doing so. The author is also more fluent in the language, being born and raised in an English speaking country, Zimbabwe, before immigrating to Portugal in her late teens, therefore having first-hand knowledge as to the frustrations encountered when researching information in relation to Portugal online in English.

The final product is to be published in English in order to be shared with those who are interested in Viana do Castelo and need more visual information.

1.1 Methodology used

The author of this thesis officially collaborated on the Viana3D project from February 2015 to July 2016 whilst frequenting the classes of the master's course in Integrated Design. During that time the author was able to understand the process behind a rendered image of a completed 3D model as well as the research done to find technical drawings or old photographs from various sources, the modulation process that occurs in SketchUp to create the 3D model with the right textures and materials applied.

Research was carried out with the basis of what was learnt during classes and the time spent working on the Viana3D project. The main fields researched were about Viana and its' urbanistic structure through history, technologies that have been used at the Viana3D project, etc.

Interviews with three elements of the Viana3D team were conducted; based on twelve set questions. The elements interviewed were the professor responsible for the project and two original members (collaborators) that help start Viana3D and participated in various aspects of work done.

The compiling of information and fact checking went into the elaboration of this thesis.

The creation of the informative content on the website was compiled with the help of Viana3D in terms of renders of the models created and certain information that would only be available on technical drawings.

1.2 Sources of information

Information about the city of Viana do Castelo is available from various sources, in physical and digital form, in Portuguese. The municipal and school libraries have a collection of books based on the city or that have articles and/or chapters on aspects of Viana, the architecture, the history and culture, etc.

Websites that are informative about the city are mainly available in Portuguese or a translated English version that in some cases is hard to understand. Such examples are “Olhar Viana do Castelo”³ that has some information and images of the history and actuality of the city.

For the Viana3D project to be able to recreate the buildings information from archives, mainly the municipal archive, is essential. Some building projects are modulated using photographs and images when the technical drawings are not available or do not exist. And sometimes the information about the buildings is acquired through the comparison of old images.

In this thesis various sources of information were used such as physical books some of which are located in libraries, as well as thesis, dissertations and articles relative to the content in the form of pdf files. Certain websites and blogs were consulted.

Three interviews were conducted with members of the Viana3D project. A questionnaire was created to find out what the public thought about the website created as well as to have a better idea as to how they knew about the Viana3D project.

³ Olhar Viana do Castelo is a blog that has posts based on the city of Viana do Castelo, <https://olharvianadocastelo.blogspot.pt/> consulted 13/03/2018.

1.3 Objectives

This project aims to connect people with information about the city of Viana do Castelo and thus promoting the city and its local architecture. Accomplishing this project would make information about Viana easier to find online written in English.

In relation to the Polytechnic Institute of Viana do Castelo (IPVC) this thesis project aims to produce and transfer knowledge and culture which follows the aims of the School. This project would help international students find out information about the place they are going to stay for a semester before they actually travel.

This project aims to show the possibility and result of interdisciplinary work. As well as the implementation of strategies and methods taught throughout the course.

On a personal level this thesis project/ investigation will allow the author to find out more about the city and technology and to show the skills necessary to create the website and content.

This thesis project aims to make Viana3D grow by strengthening its' online presence and creating new opportunities. It also aims to collect all the information about the life of Viana3D so far and have it in one location, for example the papers published, the events and exhibitions where it has been present, etc.

Chapter 2 - Communication

As per the Merriam-Webster dictionary⁴, communication is defined as “a process by which information is exchanged between individuals through a common system of symbols, signs, or behaviour.”

Depending on a specific area of focus the types and channels of communication vary. In a general overview, there are three main types of communication that are constantly being used: verbal, non-verbal and written. Verbal/ oral communication is the exchange of information by speaking and listening normally in a face-to-face situation. Non-verbal or body-language is how a person is in terms of expression, posture, inferred meaning, etc. Written or visual communication is the type that can be reviewed again at a later date and used as proof in relation to information that was transmitted.

2.1 Written / visual communication

Some of the first registrations of information in ancient times were representative symbols that are still found today in cave paintings all over the world. It is the only type of communication that has withstood the passage of time and can be used as credible proof when oral tradition has altered facts with the recounting of lore and legends.

Bruno Munari in his book *Design e Comunicação Visual* (1968) talks about visual communication as being a very vast subject reaching from drawing to photography, from simple images to complex ones. It also covers all types of graphic representation from lettering to all the types of medians that make reading text easier⁵.

One aspect of the visual communication is the way the information is portrayed; typography is the style, arrangement or appearance of printed letters on a page⁶. The font used is a key part of typography with size and readability being essential.

The “solid” form in/on which information is shown varies as it has over time evolved with the changing of the needs, wants and way of life of the masses. An example of this

⁴Communication. (n.d.) Retrieved 11/01/ 2018, from <https://www.merriam-webster.com/dictionary/communication>

⁵“(..) é a comunicação visual. Tema muito vasto, que vai desde o desenho à fotografia, à plástica, ao cinema; das formas abstractas às reais, das imagens estéticas às imagens em movimento, das imagens simples às imagens complexas, dos problemas da percepção visual que concernam ao lado psicológico do tema como: relações entre a figura e o fundo, mimetismo, ilusões ópticas, movimento aparente, imagens e ambiente, permanência retínica e imagens póstumas. Tema que compreende todo o grafismo, todas as expressões gráficas desde a forma dos caracteres à paginação de um jornal, desde os limites de legibilidade das palavras a todos meios que facilitam a leitura de um texto.” (MUNARI, 1968, p15-16)

⁶Typography as defined by Merriam-Webster dictionary, retrieved 03/03/2018, from <https://www.merriam-webster.com/dictionary/typography>

is a simple paragraph of informative text which before was simply written or printed on a white piece of paper to be read or kept. Nowadays that paragraph would have been texted out on a technological device to be messaged, emailed or posted on social networks to reach the destined person or people. Furthermore that same paragraph if transferred to an image (whether photograph, cartoon, etc.) would captured more attention and be read easier and shared with others with a click of a button in todays' society.

2.2 The Digital World

Technology has become an ever changing integral part of our lives. According to Nicholas Negroponte in his book Being Digital written over 20 years ago, "We have seen computers move out of giant air-conditioned rooms into closets, then onto desktops, and now into our laps and pockets." (NEGROPONTE, 1996, p6). Initially technology was used by large companies for data-processing with machines that were unimaginably expensive and only accessible by a select few who were trained to operate them. With the progressing of years the computer evolved towards being a product that the public could use easily; they became compact and portable so as to not keep a user always grounded to the same location, and more user friendly as time has been dedicated to designing a system that is easy to understand and navigate.

Technology is now present in our everyday lives from our communication devices, to our working lives, how we spend our free time, etc. We walk around always connected and "glued to" our mobile phones which are essentially mini computers which we use to correspond and communicate with others, research online, connect to social networks, use as calculators and alarm clocks, watch videos, etc.

Today's modern human nightmare is having a mobile phone with low battery and no way to recharge it or to not have any service/signal and not be able to be online and constantly connected.

2.2.1 The mobile phone evolution

The telephone was invented by Alexander Graham Bell in 1876, and since that time communication tools have evolved through the fixed telephone or landline such as the rotary phone in the 1930s to the 1960s with the touchpad buttons/ touchtone phones. As the models became more compact the desire to make the phone portable and being able to use it on the go increased. Gradually there appeared the car phones that were

heavy telephones fitted to the vehicle and bag phones that were still relatively heavy and mainly used in the business world.

The first mobile phones (cell phones) had the function of placing and receiving calls, being a verbal communication tool⁷, they were large and bulky and caused users to want smaller, more affordable phones. Added functions were added to make the product more interesting, such as address book, email, fax. The phone started evolving into a media device (mobile device) as manufacturers created a merge of technologies (a computer and a phone) into a single product; the smartphone. The screen became larger with higher quality as the mobile device was used for taking photographs, watching videos, surfing the internet, etc. and not just for placing calls.

2.2.2 The Internet

Accessing the internet before would require plugging in the landline to hear the piercing dial-up tone that would connect a user to the net using a large and cumbersome pc (personal computer) but would not enable the use of the phone at the same time. Nowadays with Wi-Fi⁸ and data⁹ for cell phones, a user walks around connected to the internet all the time if that is what they want.

The origin of the internet started in the 1960s with the idea to create a set of interconnected computers that could access information/data and programs from any location. ARPANET¹⁰ was the first basic networking system that connected certain computers to be able to share information; by adding more computers to this project they were able to successfully demonstrate its use. In 1972 Ray Tomlinson created the first email message to show the possibilities of network connectivity and introduced the use of the “@” symbol in the email address.

Various scientists and engineers at universities and institutes used interconnected computers for years whilst trying to come up with a way that data information stored on one computer in a certain format could be accessed by another computer on the net that did not have the same specific programs or language installed.

⁷ The term “verbal communication tool” was used by Amanda Ray in an article referring to the evolution of cell phones to describe the purpose of a cell phone. <https://www.artinstitutes.edu/about/blog/the-history-and-evolution-of-cell-phones> retrieved 09/01/2018.

⁸ Wi-Fi is the wireless connection to the internet.

⁹ Data in reference to cell phones is a service provided for a fee that connects a user to the internet in any location provided that signal is available.

¹⁰ ARPANET stands for Advanced Research Projects Agency Network that was commissioned by the United States of America Department of Defense in response to the USSR launching the first artificial earth satellite called Sputnik in 1957.

The WorldWideWeb (w3) was created by Sir Tim Berners-Lees whilst working at CERN¹¹. Berners-Lee wrote three technologies that are the basis of the web: HTML (HyperText Markup Language) which is the formatting language, URI (Uniform Resource Identifier) which is a unique identifier of a resource on the web and HTTP (Hypertext Transfer Protocol) which allows for the retrieval of resources that are linked from across the web. He created the first web browser called the WorldWideWeb, which he renamed later to Nexus to avoid confusion, on which was published the first website¹² referred to as the Project in 1991 and although it has been altered from its' earlier versions, it can still be visited to this day. According to the official website¹³, "The WorldWideWeb (W3) is a wide-area hypermedia information retrieval initiative aiming to give universal access to a large universe of documents."

More recent web browsers that are more commonly known are Microsoft Internet Explorer(1995), Mozilla Firefox (2004) and Google Chrome (2008), to name a few.

Yahoo!¹⁴ was created in 1994 by Jerry Yang and David Filo as a directory that listed most of the websites that were on the internet. Over the years various services were added to the web portal such as Yahoo!Mail, Yahoo!Messenger and others. It still is a popular site that is used on a daily basis.

Google was launched in 1998 by the founders Sergey Brin and Larry Page, as a search engine that ranked pages on the internet and showed the results based on a voting system according to the more links a page had. The effect of the Google search engine has had on users is so distinct that the word google, according to the Merriam-Webster dictionary¹⁵ means, "to use the Google search engine to obtain information about (someone or something) on the World Wide Web".

¹¹ CERN is the European Council for Nuclear Research that was founded in 1952 and studies the basic constituents of matter that started with pure physics research on the understanding of the inside of the atom and has progressed to particle physics. <https://home.cern/about> retrieved 22/03/2018.

¹² The website can be visited at <http://info.cern.ch/>

¹³ This definition is the first line of information on the page, and HyperMedia is a term referring to the hypertext which in this case includes links to texts and information not in text, such as graphs. consulted on 28/03/218 from : <http://info.cern.ch/hypertext/WWW/TheProject.html>

¹⁴ Although it was not the first search engine launched, it is one of the better known ones. Yahoo! was not the original name given to the project; it was changed to Yahoo! the year after being released and stands for "Yet Another Hierarchical Official Oracle" which refers to the layering of pages stored for the website.

¹⁵ Consulted 28/03/2018 from: <https://www.merriam-webster.com/dictionary/google>

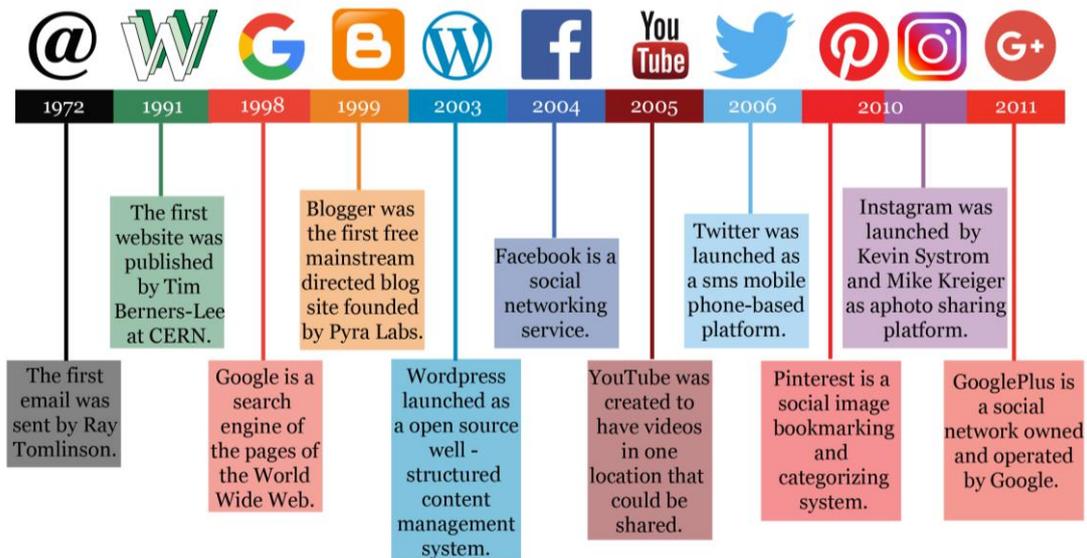


Fig. 1 – Timeline showing part of the evolution of the web, social networks and social media. (source: author)

2.2.3 Social Media and Social Networks

According to Marques, Vasco (2015) social networks are focused on the people whereas social media on the content. Examples of social media are Skype, Wikipedia, Blogs, Youtube, Twitter and Slideshare, whereas social networks are Facebook, GooglePlus, Pinterest and on a more professional level LinkedIn. Both social media and networks are used by millions of people daily and have turned into marketing tools.

These communication platforms started with blogging. Journaling online was one of the earliest ways for people to voice their opinions. The first journals were simple lines of text on a site that contained links to other sites and photographs. Jorn Barger in 1997 coined the term “weblog” to describe the log of his online internet activity. Peter Merholz shortened the term into “blog”¹⁶. The launch of blogging platforms brought the masses to sharing information and personal opinions. The most commonly platform known is Blogger which was launched in 1999 by Pyra Labs.

WordPress launched in 2003 was created by Matt Mullenweg and Mike Little, contained a selection of templates that could be used. Nowadays there exist two options

¹⁶ The definition of blog given by the Merriam-Webster dictionary is “1-a website that contains online personal reflections, comments, and often hyperlinks, videos, and photographs provided by the writer (...)2- a regular feature appearing as part of an online publication that typically relates to a particular topic and consists of articles and personal commentary by one or more authors.” Consulted 29/03/2018 from <https://www.merriam-webster.com/dictionary/blog>

in relation to WordPress depending who the user wants to host¹⁷ the website. With WordPress.org the user hosts the blog/website, downloads and installs the software and has more flexibility in the customizing of their site. WordPress.com is hosted by the actual platform that has different upgrades to meet user needs, such as the free version which is the base model that includes various themes to choose to implement. Upgrading increases the storage space a user has and offers customizable themes and plugins that alter the appearance of the website/blog created.

MySpace was created by Chris DeWolfe and Tom Anderson in 2003 and was the social networking site for connecting people to each other and sharing music. Hi5 was launched the same year and was the other social network that aimed at connecting new people together. Both these networks are still active, they were intensely popular but have seen a decline in use since the appearance and increase of popularity of Facebook.

Mark Zuckerberg launched Facebook in 2004, with the surrounding controversy in relation to other Harvard alumni and the origin of the idea, was able to grow the social network to the most popular site it still continues to be. An example of this increase can be based on Portugal which according to the Internet World Stats¹⁸ website in 2015, specifically 30 November 2015, Portugal had 7,015,519 internet users of which 5,600,000 Facebook subscribers. These figures have altered, as of June 2017; Portugal had 7,430,762 internet users with 5,800,000 on Facebook.

LinkedIn launched in 2003, was more professionally inclined to being a social network for business people to connect with each other and has up to the present day maintained that objective. Nowadays, the professional businessman has a profile on the site with most of their Curriculum Vitae information up to date to make it easier for other professionals to connect.

YouTube is a video-sharing website was created in 2005 to have videos in one location that could be uploaded and shared. It was created by Jawed Karim, Steve Chen and Chad Hurley who were employees of Paypal, an online payment system. YouTube's mission is to give everyone a voice and to show them the world¹⁹. The first video uploaded to the site is titled "Me at the zoo"²⁰ and has had over 47,000,000 views since being posted on 23 April 2005. It is one of the leading sites viewed on a daily basis. YouTube has videos uploaded on it about any topic imaginable, from solving mathematical school sums to the latest movie trailers.

¹⁷ Host refers to the storing of data and database.

¹⁸ <http://www.internetworldstats.com/stats4.htm> retrieved 30/03/2016 and 27/03/2018.

¹⁹ Their mission statement appears as the first thing on their about page. Consulted 29/03/2018 from <https://www.youtube.com/intl/en-GB/yt/about/>

²⁰ The video can be viewed at: <https://www.youtube.com/watch?v=jNQXAC9IVRw>

Twitter was launched in 2006 as a sms-based platform for friends to keep up-to-date with each other's statuses. Initially created by members of the company known as Odeo that was a failing podcast platform at the time, the idea began with Jack Dorsey and with the help of several other members²¹, was able to bring online "Twtr" which evolved into Twitter. The character limit that exists per tweet was based on the number of characters that mobile phones could send per message. Although the character count has been increased depending on the type of mobile device used, this aspect of branding has set Twitter up as a microblogging platform on which users are required to be concise.

Instagram is a photo sharing platform that was launched in 2010 by Kevin Systrom and Mike Kreiger. The platform allows the user to upload a photograph, edit it using tools such as crop, focus, contrast, apply a filter and post it. It is directed at being a smart-phone application but can be accessed via website.

Pinterest launched that same year is a social image bookmarking and categorizing/cataloguing system created by Ben Silbermann, Paul Sciarra and Evan Sharp. The virtual pin board allows user to follow, search and browse various categories saving/"pinning" the image to boards created on their profile. This process helps saves information a user wants to view at a later date, and the images when clicked on, normally route to the article/webpage they originated on.

Various other social media and networking applications have been released in recent years such as Snapchat (2011) that is a multimedia messaging application and Vine (2013) which is a short video hosting service where videos are six seconds in length and are played on a loop.

²¹ There exists a scandal concerning the origins and involvement of the people who made Twitter possible. Evan Williams was one of the more invested member/co-founder of Odeo with Biz Stone who was the other co-founder. Noah Glass came up with the original Twtr name.

2.3 New technologies

When referring to new or emerging technologies, the term is applied to tech that is changing the daily way of life.

2.3.1 Virtual Reality (VR)

An article was published online on archdaily.com by Casey Mohan in March 2016 that referred to Virtual Reality (VR) as *immersive environmental representation*. The term “Virtual Reality” was popularized by Jaron Lanier in 1987 which was used to describe the field of study that had more than a century of research but no title.

Helen Papagiannis²² (2017, p2) states that VR is reliant upon the illusion of being immersed in another space and time, one that is typically removed from your current reality. This makes it differ from what Augmented Reality (AR) is, in that AR is an enhancement of reality in real time.

Virtual Reality originated with the showing of two stereoscopic images shown side by side that created a sense of depth and immersion which was possible due to Charles Wheatstone’s research on the subject in 1838. This information was later used to create the View-Master (product of William Gruber) which was a stereoscope that became popular for virtual tourism back in the 1940’s. The images were stored on a disk that contained seven pairs of stereoscopic images to be viewed using the View-Master. This device has had various models made out of plastic made over the years but the form of the viewer and the disks still remain the same. Recent years have brought back the viewer to the younger population, in the form of a toy, to view scenes from the latest movies released such as Minions and Cars.

That same technology was used in the creation of the IAmCardboard and VRBox. The only difference is that the image viewed is on a more technologically advanced piece of equipment – the smartphone – instead of paper, film or disk.

Recent years have seen a rise in the production of consumer based VR product such as headsets that isolate the user from the real world, driving them further into a computer-generated one. Examples of this are Oculus Rift and Sony PlayStation VR which are mainly used in gaming.

²² Helen Papagiannis is a leading expert in Augmented Reality which she has studied for 12 years.

2.3.2_Augmented Reality (AR)

According to Helen Papagiannis²³, “(...) AR is a digital overlay of the real world, consisting of computer graphics, text, video, and audio, which is interactive in real time. This is experienced through a smartphone, tablet, computer, or AR eyewear equipped with software and a camera.”²⁴

Recent years have seen a steady rise in the use of Augmented Reality in various sectors such as business, education, etc. As a form of interactivity for children whilst learning, iSolar System and iDinosaur were some of the earliest forms of AR applied to children. The dinosaurs or planets would come to life on the screen when a mobile device with the downloaded software read the page.

There have been cases where the use of AR, especially in the form of applications for mobile devices, has been directed towards historical and architectural sectors.

One example of augmented reality is the project CityViewAr created for the city of Christchurch, New Zealand. This project showed the city before the various earthquakes that have hit since September 2010 and according to LEE (2012), “In addition to providing historical information about buildings, the CityViewAR application is also designed to provide onsite AR visualization of the buildings, allowing users to see a virtual 3D model of the building on the real site where it once was.”²⁵ Although the application is no longer available it is a prime example of the implementation and functionality of the technology of AR using GPS-location.

Based on the Portuguese city of Lisbon, the application Rewind Cities Lisbon²⁶ launched in 2013 uses AR to show architectural changes and historical events around the city. The application takes advantage of old photographs and applies them in GPS-located spots that can be viewed using a mobile device. It also contains historical information and photographs of certain important locations and buildings. There are three itinerary routes dedicated to writers of the city, the metro cars and history of text showing the history of Portugal from the First Republic to the New State adapted for 9th year history students. The only disadvantage of this application is that it is only available in Portuguese.

²³ Helen Papagiannis is a leading expert in Augmented Reality which she has studied for 12 years. Her book is titled “Augmented Human: How Technology is Shaping the New Reality. The Website <https://augmentedstories.com/> showcases various articles, projects and talks by Dr. Helen Papagiannis.

²⁴ PAPAGIANNIS 2017, p2-3.

²⁵ LEE, 2012.

²⁶ The application can be downloaded on Play Store and their Facebook page can be accessed from: <https://www.facebook.com/rewindcitieslisbon/>

In commemoration of twenty years of Pokemon, PokemonGO²⁷ was released in 2016 which is an augmented reality game for mobile devices which allows players to find, catch, battle and train the characters in the game. This was a game to breach the gap in the generations; between parents who in their youth spent hours watching the series episodes on television (of which there are 19 seasons) and playing the trading card game and the younger generations that are technologically savvy and generally more attracted to digital games on mobile devices.

Augmented Reality used in architectural and interior design applications (showing proposals in situ to clients) gives a better sense of the content created in relation to the space where it should be located. This method helps the viewer make alterations before physical work has begun on construction.

²⁷ <http://www.pokemongo.com/en-us/> retrieved 19/10/2016.

Chapter 3 - City

“Not only is the city an object which is perceived (and perhaps enjoyed) by millions of people of widely diverse class and character, but it is the product of many builders who are constantly modifying the structure for reasons of their own. While it may be stable in general outlines for some time, it is ever changing in detail. Only partial control can be exercised over its growth and form. There is no final result, only a continuous succession of phases.” – Kevin Lynch²⁸ (1960)

²⁸ Lynch, Kevin, 1960, p.2.

Viana do Castelo

“I reflect sometimes whilst thinking about Viana do Castelo, it is so small and has so much wonder... it has so many things that we do not see at first sight! If we could find them and show their beauty, to study them!”²⁹

According to GULÍAS et al.³⁰, the concept of the identity of a city is vast, but it can be resumed into the (several) main pillars. These are the local culture, the art that inspires when reaching a determined space, the posture and relation of the inhabitants with the urban structures, as well as its history.

3.1 Localization

The city of Viana do Castelo is located in North West Portugal, in the Alto Minho Province. It is situated on the northern bank of the Lima River where it meets the Atlantic Ocean. Due to its location, there exists a rich history associated with water commerce and as such it has a distinct presence in the evolution of the structure of the city.



Fig. 2 – Satellite map of the city of Viana do Castelo
(source: Google Maps (n.d.)Viana do Castelo district. Map data © 2018. Retrieved 20/02/2018)

²⁹ Translated by the author from the Portuguese: “Reflito às vezes para pensar Viana do Castelo, é tão pequeninha e tem tanta maravilha... tem tanta coisa que não vemos à primeira vista! Se conseguimos encontrá-las e mostrar a sua beleza, de as estudar!” (M. Miranda, personal communication, 30/03/2016)

³⁰ From the paper “As não cidades: O que poderia ter sido e não” in World Congress on Communication and Arts in 2014.

3.2 Citânia / citadel

The original site of habitation in the area, between the Iron and Romanization Ages, was on the mountain of Santa Luzia as a strategic position; to be able to see approaching enemies whether they came by land or sea.

In later years the inhabitants moved down onto the river bank so that they could be closer to trade opportunities. There still exist the ruins of the first settlement called the Ruins of the old city (Ruínas da Cidade Velha) or the Citânia de Santa Luzia which is classified as a Portuguese national monument³¹. The first excavations by Possidónio da Silva³² were started in 1876 although the citânia was known and described by Pedro de Almeida Couraças³³ in 1722 (REIS, 2008, p7). The walls were built of stone, with clusters of houses.

3.3 The Legend of Viana

There exists more than one version of the legend of how the city of Viana came into its name and it is based on a beautiful girl called Ana.

According to the poet António Manuel Couto Viana³⁴ (2002)³⁵:

“Once upon a time a small village grew on the right hand side of the River Lima, near the mouth where the sweet, slow water mixed with the wild salty waves.

It was called Átrio (the Hall) and overlooking it was a densely forested mountain, where on its ridge existed a fortification where nameless tribes (povos) lived, and at a certain time, they would descend to the coast, searching through fishing better food and more trade.

It was extremely beautiful in between cultivated pails, spans of lush gardens, pens, orchards and vineyards, bit their main calling was the sea, fishing.

On the beach, various boats waited for dawn to be launched into the waves, with eagerness at the oars, the waving of sails and the casting of nets.

³¹Património Cultural – Direção-Geral do Património Cultural (s.d.) Ruínas da cidade velha de Santa Luzia. Retrieved 15/02/2018 from: <http://www.patrimoniocultural.gov.pt/pt/patrimonio/patrimonio-imovel/pesquisa-do-patrimonio/classificado-ou-em-vias-de-classificacao/geral/view/70271>

³² Possidónio da Silva (Joaquim Possidónio Narciso da Silva) was a Portuguese architect and archaeologist who elaborated a study of the national monuments at the request of the king, Pedro V.

³³ Pedro de Almeida Couraças was a vianense who studied and wrote about secular history and arithmetic.

³⁴ António Manuel Couto Viana was a man dedicated to the arts and writing; poet, play-write, actor, etc. Born in Viana do Castelo 1923, during his life he published numerous books of poetry and literature before his death in Lisbon in 2010.

³⁵ VIANA, António Manuel Couto - “Lendas do Vale do Lima”. Ponte de Lima: Valima - Associação de Municípios do Vale do Lima, 2002, p. 53-54. (Also available online on the website Centro de Estudos Ataíde Oliveira). Text translated by the author.

At dusk, the companies would return to the Hall, to the happiness of the women and children, with the bottom of the vessels full of beating (?) fish: sardines, jack-fish (carapau), whiting-pout (faneca), conger eel (congro)...

The inhabitants of the other towns came down to the river to lavishly supply their tables.

Now living in the Hall, in the modesty of a hovel, was a beautiful girl named Ana, daughter of a fisherman and confident selling fish, always with a song on her lips, and ready to listen to a minstrel arriving from the neighbouring Galicia, where the evenings were animated in the court and the festival grounds.

A young boatman would listen delightedly to these tales/ballads of love and friendship, he transported with the river current to the Hall farmers and merchants to purchase fresh and tasty fish.

From listening so much to Ana's harmonious voice and admiring her grace, the boy started to feel a love for the girl that increased day by day.

Already having confessed to his friends and colleagues of his blossoming love, these, pleased with his happiness, would smile when the young boatman, upon returning from the hall would throw them a happy shout:

- Vi Ana! Vi Ana (I saw Ana! I saw Ana!)

One day however, he wasn't content with just seeing her and he spoke to her in a confusion that made him blush.

The girl understood the new love interest of the boy for her, his shining eyes looking at her face, at her hair.

Her heart flattery heart returned that interest, returned to him that love.

It wasn't long before the two overs were celebrating their wedding.

During the festivities, the groom's friends and colleagues would remind him of his enthusiastic yell:

- Vi Ana! Vi Ana (I saw Ana! I saw Ana!)

The saying was soon adopted by the fishermen of the Hall who would repeat it when they would return from the hard work of toiling, if they came across the welcoming shaped of the mountain, the golden beaches, and fertile plains, the slow waters of the river and the peace of their homes:

- Vi Ana! Vi Ana (I saw Ana! I saw Ana!)

By granting the Charter to the town that the mouth of the Lima, in 1258, the King Afonso III, who visited before, was entranced with so much beauty and prosperity, substituted the name of the Hall for Viana.

Surely someone had revealed that cry of love.

And only love deserved a land so blessed!"

Another legend is more concise and fanciful³⁶ and is the legend that has been passed down using oral tradition that all the children learn at school:

In Viana there was an enormous castle. Everyone admired its greatness and even the simple stone with which it had been built.

The people enjoyed walking in front of the famous castle simply to observe. Until they started to notice that every so often a princess would appear in one of the castle windows. She was a beautiful girl, with rosy cheeks, bright eyes and long blonde hair in two braids. The princess was shy, as it was not easy to observe her at the window. When she felt someone was on the street, she would hide.

Therefore it was a privilege to see the princess in the castle window and all the people that were able to spot her, would immediately tell of that success:

- *I saw Ana in the Castel! (Eu vi Ana no Castelo!)*

That is how the name of the famous city came to be Viana do Castelo.

3.4 Origin of the name – Charter/Foral

The city as it is now known started as a *vila* (village) titled as such in the 1258 Charter³⁷ issued by the king D. Afonso III (FERNANDES, 1990, p18).

In 1848, during the reign of the queen D. Maria II Viana do Castelo was raised to the status of city. Being modified from its name of Viana da Foz do Lima to Viana de Caminha and later to Viana do Castelo. The term “Castelo” (Castle) coming in homage to the valiant acts of courage and loyalty given to the queen by the men that used to man the castle (which was what the Fort of Santiago da Barra was considered to be) (REIS, 2008, p50-51).

3.5 Historical evolution of the urban structure of the city

Although there exists no clear date as to when the construction of wall was started, by 1374 it was completed in an oval shape. It had four main gates, of which the most important was situated to the South in front of the wharf known as Porta do Cais, Porta

³⁶ <http://www.lendarium.org/narrative/a-lenda-de-viana-do-castelo/> retrieved 20/10/2016.

³⁷ The Charter known in Portuguese as “Foral” bought great privileges that aimed to attract inhabitants (FERNANDES, 1990, p18).

do Postigo or São Crispim. The Northern gate situated on the same road as the Porta do Cais was baptized as Porta do Santiago due to its orientation with Santiago de Compostela in Spain and because it was the gate the pilgrims³⁸ used (REIS, 2008, p14-16).

Trade and sea commerce grew with the import and export of various products and resources such as salt, steel/iron, codfish (bacalhau), etc. This led to the structures of buildings near the wharf to be multi-purpose with store room/warehouse on the ground floor and living area on the upper floors.

The city grew around the walls which in the eighteenth century led to their demolition to be able to connect the streets on both sides of the wall. The urban structure of the city still maintains the oval shape of the original walled city although most of the walls are have long gone, some segments still are a part of remaining structures that were built using the backing of the wall.

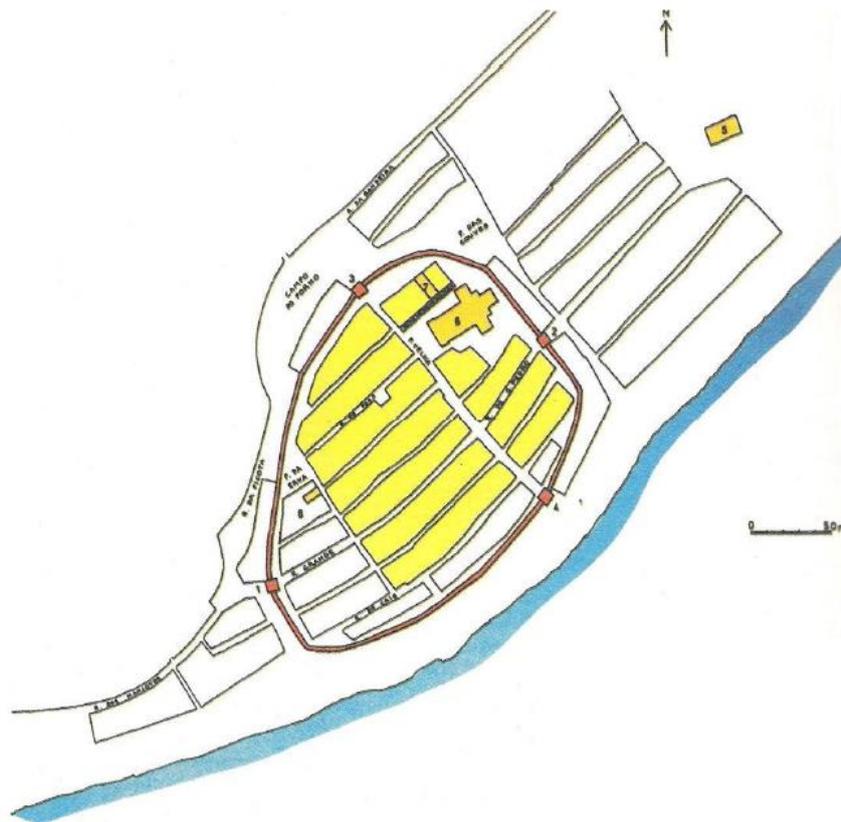


Fig. 3 – Map of the medieval city with the location of the four gates.
(source: REIS, 2008, p15)

³⁸ The pilgrims would use this route to get to the shrine of the apostle Saint James which is located the Cathedral of Santiago de Compostela. It is commonly known as the Camino Português da Costa (Coastal Portuguese Way of Saint James) which follows the coast of Portugal. The route nowadays still attracts pilgrims that pass through the city on their way north.

3.6 Bridging the river

Crossing the Lima River was done via ferry-boat called the Barca do Concelho for which a fee was charged. The boat docked by the Largo das Almas which was where the main church at the time was located, and was where people would wait. Some of that fee was collected to cover the cost of building the wooden bridge. Construction was started in 1817 and open to the public for use in 1820 (FILGUEIRAS 1979, p45). Initially the bridge was only accessible to pedestrians and mounts (eg. horses) but later guardrails were added to also allow for horse-drawn transport (CARVALHO 2005, p25).

In early 1878 a storm damaged the bridge and since the metallic bridge was erected close by, the wooden one fell into disuse and no repairs were made, which led to it eventually collapsing. (CARVALHO 2005, p27). The reminders of the location of the old bridge still exist on both sides of the Lima river with the most notable being the twin columns that still stand tall by the marina and the Chapel of Saint Lourenço opposite.

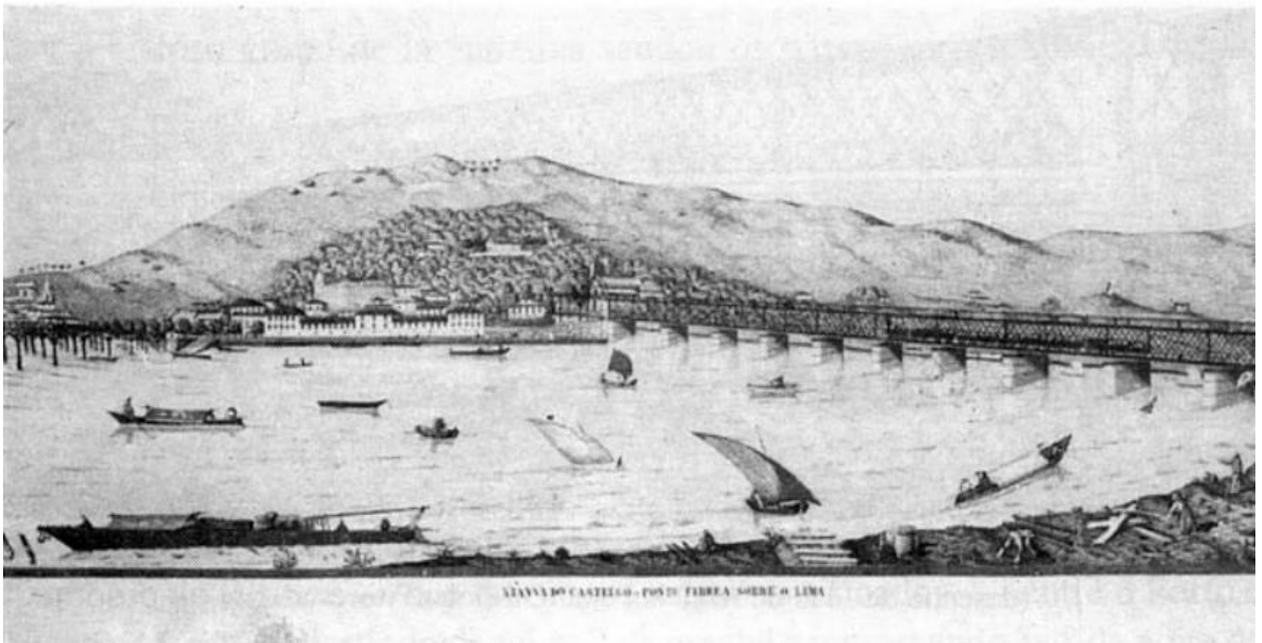


Fig. 4 – The two bridges and Viana – the remains of the wooden on the left and the new metallic on the right.
(source: Cadernos Vianenses Tom.XIX p248).

The train station was built on land where once the old Convent of Santo Teotónio dos Cónegos Regrantes de Santo Agostinho stood. This convent otherwise known as dos Crúzios was built in 1631 (FERNANDES, 1990, p22) and later demolished in 1877, with some of the old stone from this construction was reused for the station (PINHO, 2006-2007). The railway station followed the project of the Engineer Alfredo Soares and was constructed between 1878 and 1887. It was considered to be one of the most beautiful buildings of its type in the country (ABREU 2009 a, p263).



Fig. 6 The railway station of Viana do Castelo
(source: author)

3.8 Creation of the main Avenue

The start of the twentieth century brought about the creation of the main avenue, which created another physical division **of/in** the city (a tear in the urban structure) which was (FERNANDES, 1995, p71) important for the connection of the river (water commerce) with the train station (rail) via road (land) for faster distribution. To be able to create this avenue, 80 houses were demolished (LOPES et al. 2015, p10), others were partially eliminated and a small public square called Largo da Picota ceased to exist.

This event also caused a certain mixture of architecture to line along the sides of the avenue due to the demolition of entire or parts of buildings which then required certain forms of intervention with the use of granite. (REIS, 1993, p) In later years new constructions were erected, of which the most recognized architects were Rogério de Azevedo and José Fernandes Martins.⁴⁰

⁴⁰ FERNANDES, 1995, p71-75. In the section of the book he speaks about the Avenida dos Combatentes and in reference to José Fernandes Martins who was the author of numerous projects in Viana, some of which line the main avenue.

3.9 Recent Alterations

Since the creation of the Central Avenue there have little to no new roads that have come into existence until in recent years, when the Architect José Fernandes Martins Road was inaugurated 20 January 2016. The road is located between the Pedro Homem de Melo Road and Bandeira Road and was part of the rehabilitation intervention that took place in that area related to the chocolate factory which is now the Chocolate Hotel.⁴¹



Fig. 7 – A map of the city of Viana do Castelo with various points of interest marked, located on the side of one of the municipal buildings.
(source: author)

⁴¹ <http://www.cm-viana-castelo.pt/pt/noticias/inauguracao-da-rua-arquiteto-jose-fernandes-martins> consulted on 14/02/2017

Chapter 4 - VIANA 3D

“(…) it is an urban study relating to what is known about Viana do Castelo, how it could have been according to the circumstances of the projects that were thought and maybe not materialized or have suffered alterations. It is an urban study in detail of the city of Viana do Castelo considering that there exist various dimensions of this study.”⁴²

4.1 Origins

Viana3D⁴³ is a project of the Polytechnic Institute of Viana do Castelo (IPVC) that originated several years ago with a professor and a group of students who wanted to show the architecture of the city to the world using new technologies. The



Fig. 8 – The Viana3D logo is symbolic of the three dimensions that is the basis of how the models are elaborated
(source:Viana3D)

The professor Manuel Rivas Gulías, whilst researching for his doctorate thesis, found in the municipal archives the existence of technical drawings and plans that had been filed away and forgotten. These plans were for various unknown reasons never built or were original plans for structures that looked completely different at that present moment. At that moment the inspiration for the project Viana3D was born.

Whilst teaching a certain group of students in the undergraduate course of *Design de Ambientes*, the professor encountered that they had the technological savvy and interest in architecture to bring to life the project Viana3D.

The aim of the project is to create structures and buildings of interest of the city in three dimensional (3D) models using the program SketchUp that can then be shown to the public using various methods. The models are created using information sourced from archives, libraries and personal collections in the forms of technical drawings, descriptive texts, old photographs, sketches and postcards.

⁴² Translated from the Portuguese by the author, “(..)é um estudo urbano relacionado com o que conhecemos sobre Viana do Castelo, como poderia ter sido de acordo com as circunstâncias dos projetos que foram pensados e talvez não têm sido materializados ou já sofriram alterações. É um estudo urbano em pormenor da cidade de Viana do Castelo considerando que existem várias dimensões desse estudo.” (M. Miranda, personal communication, 30/03/2016)

⁴³ <https://www.facebook.com/Viana3D/> retrieved 16/11/2015.

The most common way to view the projects is via renders, which are two-dimensional images or via video that can be shown at any time and are easier for the public to identify with. Augmented Reality (AR) was the first way that was introduced to have the public interacting with the 3D models that were associated to a QR code. The QR Code has to be read by a mobile device (smartphone, tablet, etc.) using an application called AR-media Player and the 3D model appears on the screen and can be rotated to be viewed from all sides.

With the evolution of technology other alternatives appeared that sooner became more attractive to the public, especially when Viana3D is present at exhibitions. Virtual Reality (VR) shown as a 360 render of a project with the use of IAmCardboard or VRBox glasses takes the user into the middle of the model and shows a different perspective.

The hologram is also an interesting alternative that has been used and although attracts the public, it is limitative in that to be able to view the content in rotation there has to be sufficient darkness in the environment in which the projection is located.



Fig. 9- 360 render of the CP neighborhood from the center of the model to be viewed in VR
(source: Viana3D)

Viana3D has started to branch out further afield than just the city of Viana do Castelo. An architect entered into contact with the project to recreate her master's dissertation project in a 3D model. The building was a XVI century nobleman's house in located in Paço de Paredes, Meadela that had been abandoned for years and is in ruins. Using information from her dissertation that contained photographs and descriptive texts, Viana3D was able to bring to virtual life the structure.

4.2 Work done

4.2.1 Exhibitions / Public Displays:

- **Urban Sketchers**

In December 2012 a book was created to portray the modernist movement in Viana do Castelo. It contained a technical drawing of the building, information about the building and the architect and there was a blank page assigned for each building so that the students who were participating in the Urban Sketchers tour of the city of Viana do Castelo could draw the building.

- **Mostra 2013**

On the 7th and 8th March 2013 the 2nd Mostra IPVC took place at the AIM Pavilion located in the Campo d'Agonia in Viana do Castelo where Viana 3D presented the Modernism itinerary that consisted of a number of buildings in 3D from that era.

- **Museu Do Traje 2013**

The first official exhibition that was not associated with the Institute (IPVC) took place in 2013 at the Museu do Traje (the costume museum) and contained the Modernist itinerary.

- **Casa Do Povo Santa Marta**

From 14 to 23 May 2014 Viana 3D held an exhibition at the Casa do Povo in Santa Marta⁴⁴ showcasing a 3D model and video of the actual building of the Casa do Povo (which is a community centre) as well as the Modernism itinerary

- **Museu Do Traje**

From the 15th to the 23rd of March 2014, the Traje Museum in Viana do Castelo held an exhibition showing some of the work elaborated by Viana3D. The work shown was buildings elaborated by José Fernandes Martins.



Fig. 10 - Poster for the exhibition
(source: Viana3D FB)

⁴⁴ <http://www.cm-viana-castelo.pt/pt/agenda-cultural/exposicao-viana-3d> consulted on 15/02/2016.

- **Jornadas De Computação**

On 8 May 2014, in the XII Jornadas de Computação Gráfica e Multimédia⁴⁵, that took place at ESTG, Viana 3D was present to talk about 3D modulation and the creation of an application to view these models.

- **XIV Encontros de Cinema**

The XIV Encontros de Cinema de Viana do Castelo was an interdisciplinary event that ran from the 26 April to 4 May 2014 and involved showing movies and giving talks based on architecture entitled “*Arquitectura e Cinem_Diálogos*”. Viana3D organized the itinerary that took the group of participants touring the city of Viana do Castelo with an architect; the itinerary was divided by decades: 1950-60s, 1970-80 and 1990-00s.



Fig. 11 - Poster of the event
(source: Ao Norte Website)

- **Design@Ipvc_2014**

As a demonstration of capabilities of the project, Viana3D elaborated the markers for exhibition Design@IPVC_2014⁴⁶ on 25 July 2014. This exhibition showcased the work of the three design courses. The 1st year master degree students displayed bicycle stands for the project Wicla (also known as Raiooo⁴⁷) and the 3rd year finalists of Product Design and Interior and Urban Design exhibited the projects that had been created in various subjects. The courses had their projects on display with the QR code markers⁴⁸ holding more information about each project. The exhibition was held at the Oficina Cultural (the Cultural Workshop) located at the Centro Académico (the academic centre) of IPVC.



Fig. 12 - The Viana3D stand at Mostra 2015
(source: Viana3D FB)

- **Mostra 4th Edition (2015)**

For the 4th edition of Mostra IPVC in 2015 that took place at the Cultural Center of Viana do Castelo,

⁴⁵ <http://www.ipvc.pt/xii-jornadas-cgm> consulted on 15/02/2016.

⁴⁶ There exists a brief video showing the exhibition Design@IPVC_2014 on the official IPVCTV YouTube channel: <https://www.youtube.com/watch?v=VkdmyMP2qM> consulted on 19/03/2016.

⁴⁷ Raiooo is an electric wooden tricycle created with the intention of joining design with traditional craft using various materials such as recycled black cork for the seat, wood for the structure and leather for the accessories.

<https://www.facebook.com/raiooo.medein> consulted on 19/03/2016.

<https://www.behance.net/gallery/18474629/RAIOOO-Electric-Wooden-Tricycle> consulted on 19/03/2016.

⁴⁸ The markers are available on the Viana3D Facebook page at:

<https://www.facebook.com/media/set/?set=a.335815333210041.1073741835.228534577271451&type=3> consulted on 19/03/2016.

Viana3D had a stand showing some of the work that had been done. On each of the three computer monitors displayed was an aspect of the project. This ranged from technical drawings to videos of some examples of 3D constructed buildings to QR Codes showing through Augmented Reality those same models.

- **30TH Anniversary E.S.T.G.**



Fig. 13 - Pictures taken at the 30th Anniversary of ESTG - hologram and QR Codes
(source: Viana3D FB page)

On the 13th of January 2016 ESTG celebrated its 30th anniversary and in commemoration there was an exhibition held in the Barbosa Romero Library of work by the Design courses. The 1st year students of MA Integrated Design created 3D models of contemporary/modern architecture of Viana do Castelo which were displayed using QR codes and Augmented Reality. One of the models (that of the Cultural Centre of Viana do Castelo designed by the architect Souto Moura) was also displayed as a hologram in a darkened room. This was possible due the fact that one of the collaborators of Viana3D was part of the class and is always looking for new ways of technological expression.

- **Mostra 5TH Edition (2016)**

The 5th edition of Mostra IPVC in 2016 that took place at the Cultural Center of Viana do Castelo, had Viana3D displaying information about some of the work done in different ways than before. Augmented Reality with the use of QR codes showed the 3D models in a physically “touchable” way in that people could pick up the codes and manoeuvre them to get a different view. In a darkened box was a hologram of some of the buildings. Due to the issue of space the hologram present



Fig. 14 - Viana3D stand at the Mostra 2016
(source: Viana3D FB)

was smaller than that at the 30th anniversary and with an image on only one side of the inverted square pyramid. The last and most exciting display was Virtual Reality viewed with the IAmCardboard⁴⁹ headset that depicted a 360 view of Paço de Paredes in a render of the 3D model. The people who viewed this Virtual Reality created had positive reactions and some of amazement. Paços de Paredes, located in Meadela, is a house of a wealthy family that has been abandoned for years and is in a state of disrepair.

- **Jornadas de Reabilitação Urbana de Viana do Castelo**

On the 30th and 31st of May 2016 as part of the Jornadas de Reabilitação Urbana de Viana do Castelo, Viana3D set up an exhibition in the Claustro of the Mosteiro de São Domingos (the monastery of Saint Dominic).

The exhibition included a hologram of the Bairro CP (CP Neighbourhood) as well as a video through the interior of the neighbourhood to better view from different angles the constructions that were projected.

Videos showing photographs of urban rehabilitation of buildings and their original forms passed on the monitors.

Paços de Parede was also presented in video form as well in VR with the use of IAmCardboard.

- **Semana C & T**

On the 17th and 18th of November 2016 Viana3D participated in the C & T week that took place at the high school of Santa Maria Maior. The case study that was presented was the rehabilitation of the Convent of São Francisco do Monte (Saint Francis of the Mount) in virtual reality. Photographs of the actual state of degradation were shown with a video of the 3D rehabilitation that was



Fig. 15 - Viana3D exhibition at the Jornadas de Reabilitação Urbana (source: Viana3D FB)



Fig. 16 – Part of the Viana3D stand showing AR and VR at the Job Summit. (source: Viana3D FB)

⁴⁹ IAmCardboard is a Virtual Reality headset that is composed of a cardboard structure with biconvex lenses and a magnet switch. Considered one of the cheapest and easiest to use headsets, it only requires the use of an iPhone or android device. More information is available on the official website: <http://www.imcardboard.com/> consulted on 19/03/2016.

done. With the use of a VR viewing device, a 360-image based in the courtyard will be used to help people understand the building better.

- **Cimeira de Emprego 2017**

The 18th and 19th of April 2017 the Polytechnic Institute of Viana do Castelo held a job summit which included various course and company stands, talks, and workshops. Viana3D also had a stand showing an augmented reality example via QR Code of a building that had been created and a video of another building.

- **XV Jornadas da Computação Gráfica e Multimédia**

On the 26th of April 2017 in the library Barbosa Romero of ESTG, Viana 3D displayed some examples of work done at the XV Jornadas da Computação Gráfica e Multimédia using VRBox and VR-viewing applications and programs to show examples using various devices.



Fig. 17 – The Viana3D stand at the Jornadas and the interaction of the public with some of the projects shown
(source: Viana3D)

4.2.2 Conference / Papers

Viana3D has submitted papers to various conferences throughout the globe with themes varying from urbanism and heritage to the cities that could have been⁵⁰.

Rivas, Manuel et al, As não cidades: O que poderia ter sido e não foi, WCCA 2014, VII World Congress Communication and Arts, Abril 20-23, 2014, Vila Real, Portugal.

Rivas, Manuel et al, Projeto Viana 3D: Veículos de Comunicação para o Património Cultural, WCCA 2015, VIII World Congress Communication and Arts, Abril 19 – 22, 2015, Salvador, Brasil.

Miranda, Micael et al, Design's Role on the [RE]Habilitation of Social and Urban Structure, International Conference Architectonics Network: Mind, Land and Society, June 2015, Barcelona, Spain.

Ribeiro, Adriano et al, No Cities: Design and Strategies of Communication. Interactive innovations as a vehicle for communication and patrimony, International Conference Architectonics Network: Mind, Land and Society, June 2015, Barcelona, Spain.

Dias, Alzira: The design of railway heritage built and not built and its influence in the design of the city of Viana do Castelo, The Third International Conference on Railway Technology, 5-8 April 2016, Cagliari, Sardinia⁵¹.

⁵⁰ View the past papers in annexes.

⁵¹ An abstract was submitted and accepted to the conference, but the submission to the conference was withdrawn because of incompleteness of the main project at the time: The CP worker's neighborhood, due to missing information that was pertinent for the modulation of the project.

4.2.3 In The News

At the end of January 2016, Viana3D appeared in the news on a regional level after an interview given by Professor Manuel Rivas Gulías. One of the main talking points was the number of buildings in 3D that Viana3D has on file.

Radio Alto Minho, a radio local station with the objective of informing the masses, on their website published the article in January by Andrea Cruz⁵² titled “Antigo Mercado de Viana que deu lugar ao prédio Coutinho ganha três dimensões em projecto do Politécnico” (“The Old Market of Viana that gave way to the Coutinho building now in three dimensions in the Polytechnic project”). The article mentions the origin and some of the objectives of the Viana3D project as well as some examples of the buildings that have been modulated, are on file and the architects who created them. There is a brief mention of a rejected application proposal for funding as well as the Leonardo Da Vinci bridge that was a project with the architect Genco Berkin at the Fatih Sultan Mehmet Vakif University in Istanbul.

AltoMinho.tv is an online platform dedicated to the communication of information about activities in the region. On 21 January 2016 it ran the article⁵³ “Escola em Viana dá três dimensões a ponte de Leonardo da Vinci que nunca saiu do papel” (“A School in Viana gives three dimensions to the Leonardo da Vinci Bridge that never left paper”).

The regional newspaper, Correio do Minho, published a redacted version of the article online on 25 January 2016 as “Viana 3D começa com Rogério de Azevedo e encontra Leonardo da Vinci” (“Viana 3D starts with Rogério de Azevedo and finds Leonardo da Vinci”)⁵⁴.

The local printed newspaper, A Aurora do Lima, published the article⁵⁵ on 4 February 2016 under the title “Viana 3D “encontra” Leonardo da Vinci” (“Viana 3D “finds” Leonardo da Vinci”).

⁵² Andrea Cruz is a journalist for Alto Minho Radio, participating in the newscasts and IPVC-O Minho Académico which showcases the aspects of the Polytechnic Institute of Viana do Castelo. The article can be found at: <http://radioaltominho.pt/Noticias/antigo-mercado-de-viana-que-deu-lugar-ao-predio-coutinho-ganha-tres-dimensoes-em-projeto-do-politecnico/> (retrieved 26/01/2018).

⁵³ The article by AltoMinho.tv can be found at: <http://www.altominho.tv/index.php/noticia/?slug=677-escola-em-viana-da-tres-dimensoes-a-ponte-de-leonardo-da-vinci-que-nunca-saiu-do-papel> (retrieved 26/01/2018).

⁵⁴ The article from Correio do Minho can be found at: <https://www.correiodominho.pt/noticias/viana-3d-comeca-com-rogerio-de-azevedo-e-encontra-leonardo-da-vinci/92134> (retrieved 26/01/2018).

⁵⁵ The newspaper clipping can be found in the annexes.

4.3 - Online Presence

Although initially slow to become visible, Viana3D's online presence has now grown to be present on various types of social media. According to Merriam-Webster, social media is defined as "forms of electronic communication (as Web sites for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other content (as videos)."⁵⁶ Even though the information posted on the sites is accurate, it is not considered by some to be completely reliable. This is due to the existence of immense useless, inaccurate space-occupying information that is posted by various users on these platforms.

4.3.1 YouTube

YouTube⁵⁷ was one of the first online sites that Viana3D had an account on. Viana3D sometimes uses videos as a means of communicating information about a certain project; an example of this is the building of the IPVC. One of the first projects to be created (even before Viana3D was official) was the 3D modulation of the various schools. Video was one of the only ways to be able to show the work that was done besides using renders (pictures of the finished models); only months later did Viana3D turn towards Augmented Reality and QR Codes.

4.3.2 Vimeo

The account Viana3D on Vimeo has the promotional video of Raiooo⁵⁸ which was filmed and created by the Viana3D team at that time because they had participated in the project as part of their master's degree course.

4.3.3 Facebook

The project Viana3D⁵⁹ has been active on Facebook since the creation of the official page on 9 January 2014. Although it is noted that with the exception of the initial publications of available models possible to be viewed at 3D Warehouse or on Google Earth, this specific platform was not used extensively for information dispersal as it is used nowadays. One of the problems with Facebook users is that few people read the information that is published; most just put a "like" on a post and continue scrolling

⁵⁶According to the online dictionary of Merriam-Webster:

<http://www.merriam-webster.com/dictionary/social%20media> consulted on 20/03/2016.

⁵⁷ The Viana 3D YouTube channel can be visited at:

<https://www.youtube.com/user/Viana3DIPVC>

⁵⁸ The video can be viewed at: <https://vimeo.com/viana3d>

⁵⁹ The page can be visited at: <https://www.facebook.com/Viana3D/>

down.⁶⁰ It has been observed that videos tend to get the most attention and shares when posted on Facebook than when images are used.

4.3.4 Google+

The google+ page of the project⁶¹ had initially posts of the videos that had been created about the various IPVC buildings.

4.3.5 Instagram

At the beginning of March 2016, Viana3D created its Instagram account⁶² with the intention of reaching different people with the use of this social networking tool. Instagram works as a photograph sharing application for mobile devices and since the easiest way to show Viana3D work is through renders of the models created.

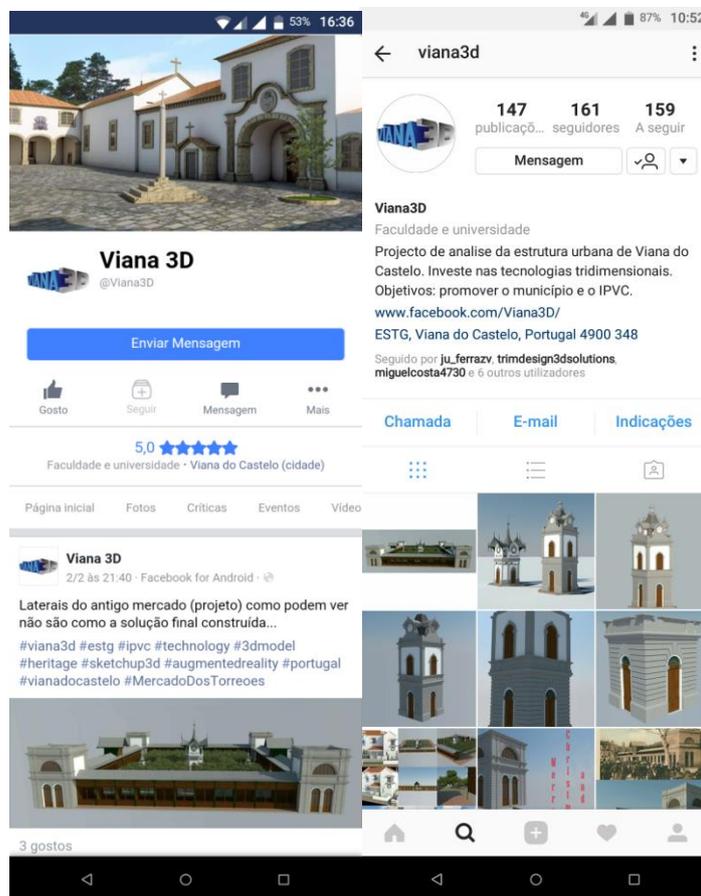


Fig. 18 – Screenshots of the Viana3D Facebook page and Instagram profile as seen on a mobile device. (source: author)

⁶⁰ A. Ribeiro, personal communication (26/03/2016). Speaking about one of the issues that occurs with Facebook posts.

⁶¹ The Viana3D Google+ profile can be viewed at: <https://plus.google.com/u/0/105343883464099247207>

⁶² Viana3D Instagram profile can be viewed at: <https://www.instagram.com/viana3d/>

Chapter 5 - Case Studies

The two case study cities chosen were Valença and Oporto, due to their origin, history, location in the North of Portugal at the edge of river and being part of the Portuguese Route of St James. These cities are Valença and Oporto. Both of these case studies were chosen due to certain similarities with they have with the city of Viana do Castelo in relation to architecture, location, information available, etc. It can be said that travellers in Valença are mainly Spanish speaking whereas the travellers to Porto are more international and English speakers, this being due mainly to the location of the cities. Valença like Viana do Castelo has relatively little information in English available online.

There exist certain websites such as the lonely planet⁶³ that feature the cities of Portugal and give very helpful information concerning tourist-based interest, such as where to eat, where to stay and some examples of what to see and explore whilst visiting. The information based on architecture is mainly directed at iconic and mostly well-known examples.

The third case study chosen is a website called Julie Dawn Fox in Portugal that is an example of an easy to read website in English about Portugal. The website contains historical information and anything a tourist might want to know about before visiting Portuguese cities.

5.1 Valença

The city of Valença is located in the north of Portugal on the southern side of the Minho River which stands the physical border between Portugal and Spain.

There exists a mixture of theories as to who were the first people to settle in the area, but a certainty is that the location was good for hunting and fishing. An important part in the history of the city was the passing through of the Roman General Decimus Junius Brutus after crossing the Lima River⁶⁴ and arriving at the Minho River. Under the rule

⁶³ The lonely planet website as retrieved on 02/04/2018:

<https://www.lonelyplanet.com/portugal/the-north/porto>

⁶⁴ It is said that during the conquests of the Iberian Peninsula, when the Roman general Decimus Junius Brutus and legion of army arrived at the Lima River, the legion thought it was the legendary River Lethe because of its beauty and that they would lose all their memories. The only way the soldiers crossed the river was after their made his way to the other side and called each soldier by name. There exist statues of the general and his men on the two banks of the river near the Roman/Romanic bridge that was later built.

of Emperor Augustus, the General built strategically placed fortresses along communication routes of which an example is the fortress of Valença.



Fig. 19 – The fort of Valença showing the metallic bridge over the Minho river to Tui (source: author).

The history of Valença is intertwined with that of Tui on the Spanish side of the river. Both cities saw their share of invasions, destruction and restoration. The first walls of Valença were built in the 1200s after hostilities arose between D. Afonso IX and D. Sancho. Valença was known as *Contrasta* until 1262 when D. Afonso II via Charter had the name changed to Valença and fortified the walls to protect all the inhabitants. In the XVII century Valença was fortified after the Spanish attacks in previous years, considered to be the largest innovative military project of its time.

The International Bridge or Metal Bridge is a road-and-rail bridge which connects Valença with the city of Tui (Spain). The bridge was built in the XIX century and is considered to be the largest symbol of modernism in Valença.

In relation to the availability of information online it is largely in Portuguese, travel sites and a few tourist blog posts and articles in English. The website Visit Valença⁶⁵ is interesting, though in Portuguese there is the option to Google Translate it automatically to other languages. This site has the history of the city, architecture to see with captions under the images, tourist options and itineraries amongst other things.

⁶⁵ <http://www.visitvalenca.com/> retrieved 13/12/2015.



Fig. 20 – Screenshot of the homepage of the website Visit Valença (source: author. Screenshot of Visit Valença © 2018. Retrieved 31/01/2018)

An important aspect of the website is the historical information that is located in the middle of the homepage of the website that can be easily accessed to continue reading. Specific information about places of interest is accompanied by an image, a brief descriptive paragraph and the GPS location which is useful for a user looking to visit.

The website does not show how many visitors have clicked on it nor is there visible public interaction in the form of comments and such things, they do however invite the public to email them or phone with any comments or suggestions. There exists the possibility on articles/posts to share the content on other social networks.

The icons to their other social network/media sites⁶⁶ are located both at the top and the bottom of the website (in the header and footer, respectively). Instagram, Facebook, Youtube and Pinterest are represented with the first two being the most used information outlet. Their Instagram page has been active since September 2018, has 420 followers with regular posts that contain watermarked photos with a simple phrase explaining the content. The Visit Valença Facebook page was created in July 2015 and has 3975 likes with the content ranging from blog posts from the website, events that are taking place and the posting of photographs of the market and other events.

⁶⁶ The links to the sites can be accessed in the table comparing social media/networks of the case study websites (Fig. 25).

5.2 Porto (Oporto)

A historically rich trading city situated on the northern side of the Douro River, which has a number of bridges joining the two sides – one of the most notable being the iconic metal bridge known as Ponte Luís I which supports road-and-rail transport. In the XVIII century the city spread out of its walls that were built earlier on for protection. Throughout the French invasion and the civil war, the city saw much carnage and destruction. As well as being a very religious city, it also had many political occurrences which added to its history and attraction for tourists.



Fig. 21 – A view of Porto and the metallic bridge over the river Douro (source: author).

In 1996 UNESCO awarded it the status of “World Heritage Centre”. In 2001, the city of Porto and Rotterdam were the European Capitals of Culture. This together with the products from the Douro valley area helped the city of Porto to be recognized around the world – an example is Port Wine.

Being Portugal’s second biggest metropolis, Porto is a tourist destination with all the main transport options easily accessible (including the airport). In recent years the city has been rebranded by the city council with a new design and identity called Porto.⁶⁷ (Porto ponto) which won various awards worldwide. Inspired by the Portuguese tiles, *azulejos*, a set of icons were created to define characteristics and aspects of the city of Porto, for example, culture, buildings, etc. These “tiles” are then joined together to make up a representative images or stories of the city. This publicity is different and simple and has been used to diminish visual pollution whilst advertising and being part of the city.

⁶⁷ The brand “Porto ponto” can be viewed in greater detail at Design Culture retrieved 20/12/2017 from: <http://www.designculture.com.br/portoeponto>

While searching for online information in English many sites were found, some of which were travel sites. One example that was interesting was goOPORTO – Europe’s Vintage Port City | Tourism Guide⁶⁸. The official city council website has a direct link to the travel website, VisitPorto⁶⁹ which is helpful to travellers looking for information. In September this year Kevin Gould wrote an article for The Guardian online titled “Porto city guide: what to see plus the best hotels and restaurants and bars.” These websites and articles will help to boost the international interest in the city of Porto.

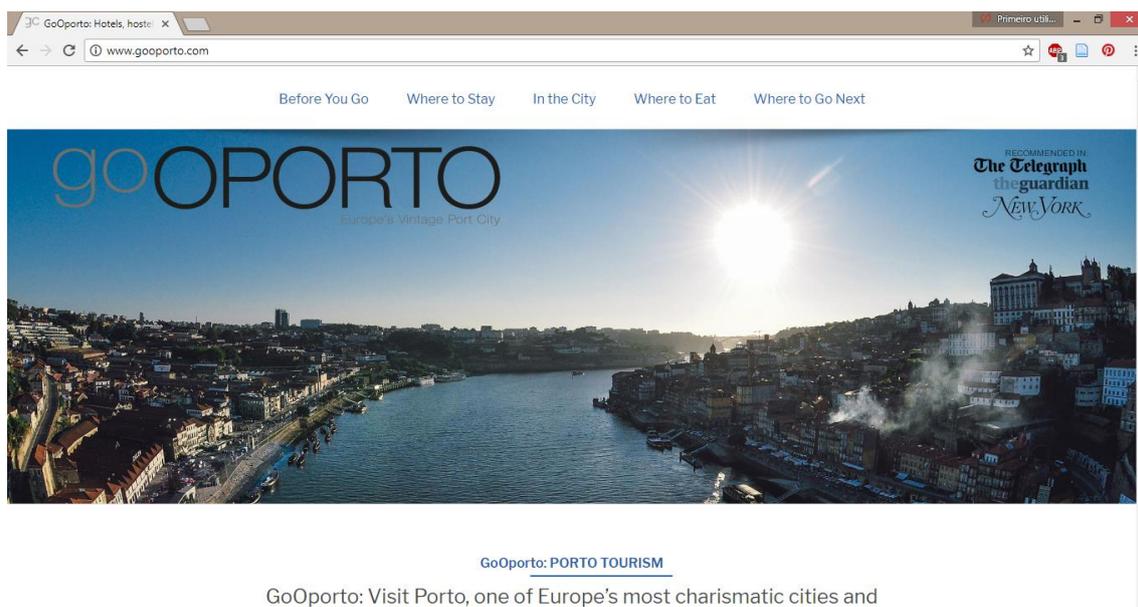


Fig. 22 – Screenshot of the homepage of the website goOPORTO
(source: author. Screenshot of © 2018 goOPORTO. Retrieved 02/02/2018)

The website GoOporto is written in English and is tourist orientated with information on where to eat, things to do, where to stay (with listings for hotels, hostels and apartments), listing of tour sites as well as public transport information. Brief historical information is given for certain important and iconic places to visit.

The website does not show the number of visitors to the site nor any form of public interaction (e.g. comments on posts); there is however an email address and phone number for questions, comments or suggestions.

Located at the bottom of the website in the footer are the social network/media icons⁷⁰ for Facebook, Twitter, Google+ and Instagram. The GoOporto Facebook page was

⁶⁸ <http://www.gooporto.com/> retrieved 12/12/2015.

⁶⁹ <http://www.visitporto.travel/Visitar/Paginas/default.aspx> retrieved 12/12/2015.

⁷⁰ The links to the sites can be accessed in the table comparing social media/networks of the case study websites (Fig. 25).

created in July 2012 and has 1 233 likes with content being limited to images from the Instagram account and links to articles about Porto. The Instagram profile has 159 followers since being created in the beginning of the year, although no pictures have been uploaded recently. The content on Instagram that does exist consists of pictures taken by users who tag their photographs with #GoOporto and are posted with little to no information about what is portrayed.

5.3 Julie Dawn Fox in Portugal

Julie Dawn Fox is the creator and blogger of the website Julie Dawn Fox in Portugal - Insider Insights For Discerning Cultural Travellers⁷¹ and is an example of a simple, easy to read, informative website based on Portugal and written in English. Julie Fox is a traveller who has lived in various countries for several years before living in Portugal from 2007. She is a blogger, writer and contributor to travel and tourism-related publications and books as well as a trip advisor and planner.

The visual aspect of the website is easy on the eyes as it uses a white background with contrasting coloured fonts. The site is easy to navigate with site pages listed in the adequate categories located at the top of the page under the header logo and title. The content of the website is informative and easy to read and understand.



Fig. 23 – Screenshot of the homepage of the website Julie Dawn Fox in Portugal (source: author. Screenshot of © Julie Dawn Fox 2017. Retrieved 02/04/2018)

⁷¹The website can be reached at <https://juliedawnfox.com/>

Although there is no way to know how many visitors click on the site, there exists public interaction with the website in the form of comments on blog posts. Most of the comments are appreciation for the information posted and stories of past experiences which the author always responds to and this in turn creates a friendlier user experience on the website. The possibility of sharing blog posts/article with the shortcut icons on the left side of the page is an advantage to visitors.

In the footer of the website exists the possibility of connecting to the other social networks/media sites⁷²: Facebook, Pinterest, Twitter and Instagram. These other sources give a more rounded picture of the public's interaction with Julie Dawn Fox. For example the Facebook page has 2 626 people who like the page, with regular sharing of the blog posts written on the website. The Instagram profile hasn't been posted to since last year but has 1804 followers with content being photographs taken by Julie Dawn Fox on travels around Portugal. The Twitter account is regularly used with 4 320 followers with the tweets being mainly links to blog posts from the official website. Pinterest is also used effectively to promote users to visit the official website by pinning images of tours in cities, where to stay, amongst other things.

⁷² The links to the sites can be accessed in the table comparing social media/networks of the case study websites (Fig. 25).

5.4 Comparison of the case studies

The three websites chosen: VisitValença, GoOporto and Julie Dawn Fox in Portugal all have the same basis of sharing information about Portuguese cities (either specific or various). The following tables are a comparison and summary of the aspects of the websites as well as the social network/media profiles that they have associated.

	Valença	Porto (Oporto)	Julie Dawn Fox in Portugal
Website	https://www.visitvalenca.com/	http://www.gooporto.com/	https://juliedawnfox.com/
Website language	Portuguese (Google translate option)	English	English
Website content	Historical information, Tourist orientated, Latest news, What to visit, where to stay or eat.	Tourist orientated, Gastronomy, etc., Things to do, where to stay/listings, Transport information.	Author experience based, Tourist orientated, Historical information, Travel itineraries.
Public interaction	Not visible: visitors can email or phone them with comments or suggestions. Possibility of sharing posts to social networks.	Not visible: Visitors can email or phone them with questions, comments or suggestions.	Visible: comments on posts are based on the content shared; stories of past experiences, appreciation of advice, etc. Visitors can email or phone for collaborations or questions.
Icons to other social network/media profiles	Located in the header and the footer	Located in the footer	Located in the footer
Social network/media icons	Instagram Facebook Youtube Pinterest	Facebook Twitter Google+ Instagram	Facebook Pinterest Twitter Instagram

Fig. 24 - Table comparing the three different case study websites

	Visit Valença	GoOporto	Julie Dawn Fox
Facebook page link	https://www.facebook.com/visitvalenca/	https://www.facebook.com/GoOportoGo/	https://www.facebook.com/juliedawnfox/
Facebook likes	3 975 Likes	1 233 Likes	2 626 Likes
Facebook content	Blog posts from the website, Events taking place, Posting of photographs of the market and other events.	Images from the Instagram account, Links to articles about Porto.	Blog posts from the website, Links to general articles about Portugal.
Facebook page information	Created 31/07/2015	Created 02/07/2012	Created 24/11/2010
Instagram link	https://www.instagram.com/municipiodevalenca/	https://www.instagram.com/goporto/	https://www.instagram.com/juliedawnfox/
Instagram followers	420 followers	159 followers	1801 followers
Instagram post information	53 posts Active since 09/2018 Posts regularly	87 posts Active since 01/2018 Last post 03/2018	142 posts Active since 11/2012 Last post 09/2017
Instagram content posted	Watermarked photos the have a simple title about the content.	Uses photos taken by users who tag their pictures with #GoOporto with little to no information about what is shown.	Images based on the places the author visited with a brief description of content and location.
Twitter link	–	https://twitter.com/goporto	https://twitter.com/juliedawnfox
Twitter followers	–	3 followers	4 320 followers
Twitter content	–	No content	Regular tweets of links to articles/ blog posts from the website.
Twitter page information	–	Active since 12/2017	Active since 12/2009
Pinterest link	https://www.pinterest.pt/visitvalenca.com/	–	https://www.pinterest.pt/juliedawnfox/

Fig. 25 - Table comparing social media/networks of the case study websites

Chapter 6 – Website

The way that was chosen to divulge the information that makes up the base of Viana3D was a website using a pre-existing, user-friendly platform. The platform chosen was WordPress as it is considered to be credible and more respectable than social networking platforms like Facebook and Instagram and has more been in existence for a longer time.

WordPress.com hosts the website on its' platform and has paying upgrading options for storage space, access more customizable themes and plugins that alter the appearance of the website/blog created. The platform WordPress.com was also chosen because of the option to use a template website which is customizable in certain aspects, it can be accessed from anywhere and users don't have to know code to be able to post content. The adaptability of the website to be viewed in three different sizes (desktop, tablet and smartphone) is a necessity, considering that people tend to look up information using their smartphones which at times is on websites that are only the perfect fit for desktop viewing.

The content of the website is based on the work that has been done by Viana3D and will be divided into various sections; home, about, Viana do Castelo, and news.

The website can be accessed via the link: <https://viana3d.wordpress.com/>

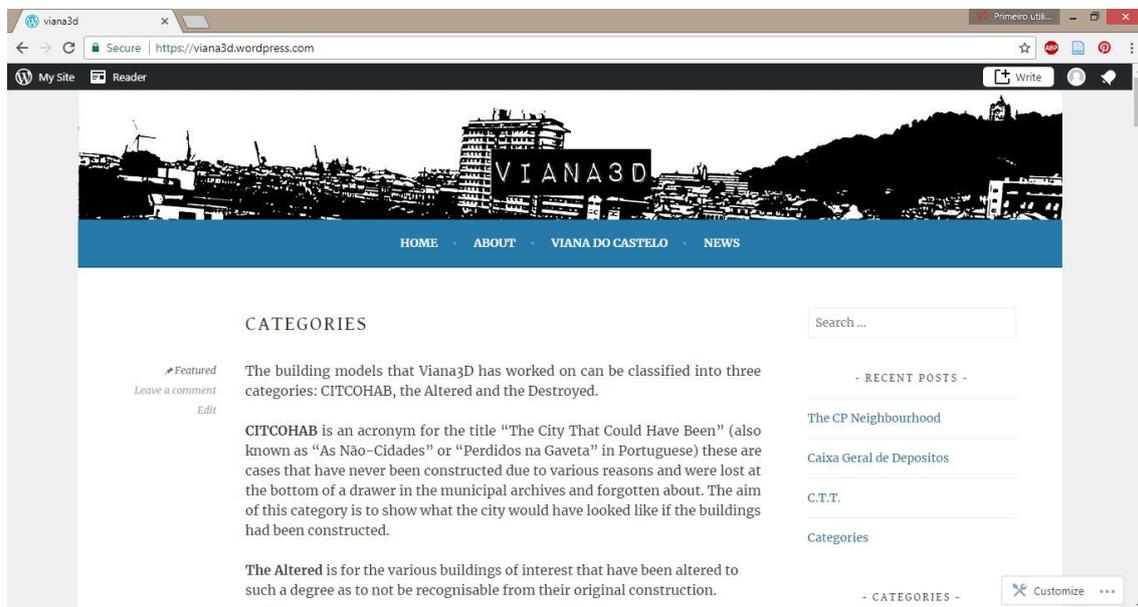


Fig. 26 – Screenshot of the homepage of Viana3D website viewed on desktop (source: author. Screenshot of Viana3D WordPress. Retrieved 30/03/2018)

6.1 Appearance

The website header image is a distorted and edited⁷³ photograph of the city of Viana do Castelo seen when crossing the metallic bridge. The image is tilted in such a way as to distort the normal skyline of where the photograph was taken by the author, levelling out to a degree the difference in altitude that exists between the Sanctuary of Santa Luzia on the mountain and the windmill and cranes that are located near the seafront and docks. The use of black and white contrasting makes the details of the image less discernable and shows the scene as more of a whole. The title is printed in the font “Impact Label”⁷⁴ that brings an element of the past forefront since that is the basis of where Viana3D bases its’ work.



Fig. 27 – Header image on the Viana3d WordPress website.

The blue theme was chosen for the title bar as representative to the original Viana3D logo which is largely blue. The background color remains plain and light as posting an image would distract the eye from the written content as well as either break the continual flow of scrolling down the website or appear in tile format that would confuse the viewer.

6.1.1 Fonts

In terms of fonts for the headings “Gentium Book Basic” in regular and normal size was chosen as it is elegant without being too fancy and easy to read. The Base Font option of “Merriweather” complements the other font.



Fig. 28 - Font settings on the WordPress.com customizer

6.1.2 Widgets

A widget is an element of interaction that allows the user to perform a function or access information. Several widgets were chosen to appear on the main sidebar of the

⁷³ Editing done using the program Photoshop.

⁷⁴ The font “Impact Label” is found on the website dafont (<https://www.dafont.com/pt/>) which is an archive of downloadable fonts.

website located on the right hand side of the screen when accessed on a computer. These widgets when using a tablet or smartphone appear at the bottom of the page

The “Search” option is essential on any website to be able to find information fast about a certain topic using a keyword.

“Recent Posts” is handy to have as it shows the titles of the recent blog posts posted in chronological order from the most recent to oldest.

The “Categories” widget shows the various categories used to define the content posted on the website. There are three main categories that make up the basis of Viana3D: CITCOHAB, the Altered and the Destroyed. The website content is divided into these three categories as well as a fourth titled “Uncategorized” that is for information that doesn’t belong solely to any of the other three categories.

To connect the already existing Facebook page of Viana3D with the website, the widget “Facebook Page Plugin” was used showing only the cover photo from the Facebook page. By clicking on the image, the user is automatically taken to the Viana3D Facebook Page in a new tab.

The “Instagram” Widget was also added with the authorized Viana3D Instagram account so as to show the latest image posted on the photo sharing platform. By clicking on the image, the user is automatically taken to the image on Instagram.

On the About page the “Video” widget was added to the First Footer Widget Area, to show the video of how to use the AR Media Player app to view a QR code that contains a 3D model of a building done by Viana3D.

6.1.3 Webpages

Webpages are single pages of content of a website containing specific information. The Viana3D WordPress website has several webpages that display certain aspects of the project.

Home

The “Home” page is the principle opening page that appears when opening the website of Viana3D. It was chosen to have the blog posts appear on this page so that the user has immediate access to information and images about some of the models/projects that Viana3D have created. The first pinned post explains about the categories that divide up the work done by Viana3D.

About

The “About” page contains information about what the Viana3D project is, how it originated, how work is shown to the public, etc. It also contains the direct links to access the other online profiles and pages of Viana3D: Facebook, Instagram, Google+ and YouTube.

Viana do Castelo

This page refers to the history of the city in which the project Viana3D is based – Viana do Castelo. Although brief, it gives a localization of where the architectural models and projects are situated.

News

The “News” page contains a brief summary of the articles published about the Viana3D project in 2016 as well as the links to access the full articles as well a photograph of the news clipping from the local newspaper.

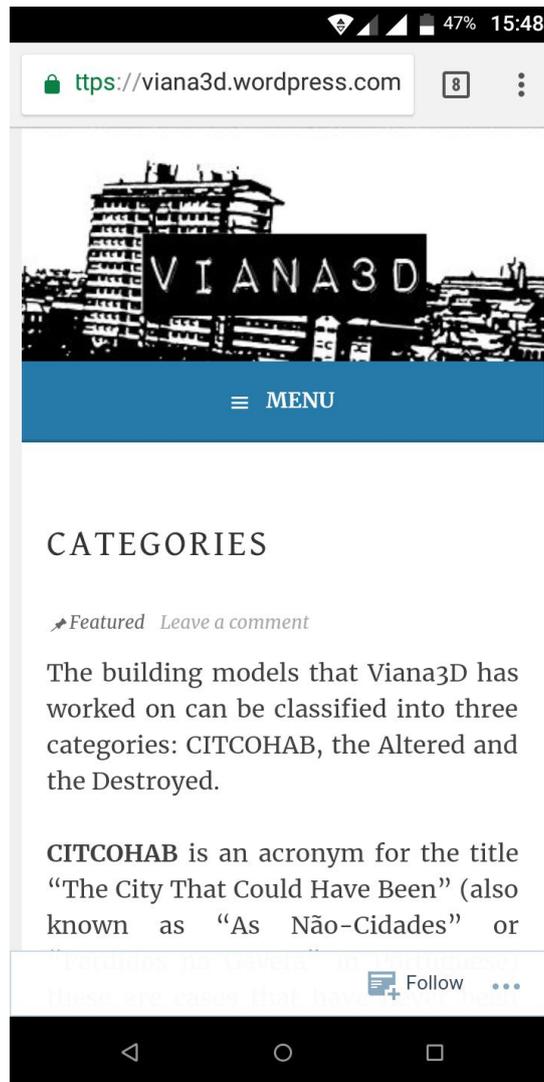


Fig. 29 – Print screen of website when visited on a smartphone

6.2 Content

Over the time the author collaborated on the Viana3D project, some buildings were modulated that sparked particular interest. This information of these models will be posted on the website as blog posts.

The buildings that are featured and referred to in this study are classified into three main groups: CITCOHAB, The Altered and The Destroyed. For some of these buildings, the only proof of their existence is through in photographs that exist in private collections or have be published on blogs, in articles or books about the city of Viana do Castelo. In rare cases technical drawings still exist in archives (either council or regional archives) but in various cases the paperwork has been misplaced, lost or destroyed.

6.2.1 CITCOHAB

CITCOHAB is an acronym for “The City That Could Have Been” otherwise known as “As Não-Cidades” or “Perdidos na Gaveta” (Lost in the Drawer). These projects are proposals of various dimensions and locations that were filed at city council to be built but ended up either being rejected or forgotten about and filed away in the city archives – to become lost in a drawer.

According to Gulías et al. (2014) “Cities, or in this case CITCOHAB are records of what the urban structure could have been, a course that could completely have altered the vision and actual identity of the city.”⁷⁵ The possibilities of variations to what we have come to know as the city of Viana do Castelo are endless, if a fraction of the CITCOHAB constructions were built the physical representation of a city could have been altered the cultural aspects and in turn the economical functions.

6.2.1.1 The CP Neighbourhood

After the railway line was laid down and the station built, there was a need to build housing for railway workers. Housing would need to be ideally located near the railway line and close to the city centre and the station. The ideal location chosen was located where the Avenue Capitão Gaspar de Castro meets the Avenue 25 April.

The CP (Comboios Portugal), or the Trains of Portugal, was the public entity that was responsible for anything to do with passenger and freight trains and their

⁷⁵ Free translation of the original article published in Portuguese by Gulías et al, “ As cidades, ou no caso as não cidades são registos do que a estrutura urbana poderia ter sido, um rumo que poderia alterar completamente a visão e identidade atual da cidade.”

infrastructures⁷⁶. The company was at the time the responsible party for the housing of the workers.

The neighbourhood (known as *Bairro dos Trabalhadores de CP* – The CP Workers Neighbourhood) eventually built consisted of twelve buildings to cater to the families. After a number of years the neighbourhood was abandoned by degrees as the original workers who inhabited them either moved into other houses or became deceased. The neighbourhood became abandoned in near totality for two decades before some of the houses were boarded up to prevent marginal activity from occurring and the houses to be used as trash dumps⁷⁷. In later years the buildings were torn down, the land sold with the intention of constructing a luxury habitational complex⁷⁸.

The Proposal

There existed a proposal from 16 November 1963, for the creation of this neighbourhood that was filed away and left abandoned at the bottom of a drawer. Several technical drawings of the Neighbourhood were found at the city council archives; the floor plans and some views, that enabled the creation of three dimensional model to commence. Certain aspects could not be completed until copies of the rest of the technical drawings could be located in the archives of Infraestruturas de Portugal in Lisbon.

The proposal was a closed-in neighbourhood that had at its centre a green area. The walled in community had a collection of simple houses that were based on a standard pattern. The entrances of these standard houses inside the neighbourhood were accessed by crossing the walled off personal yards of each house and some had windows facing onto the green area. The perimeter of the neighbourhood was composed of walls and in the front a line of symmetrical housing that would cater to the CP workers in more elevated positions. The station master's house is the focal point for the neighbourhood as it connects the gates of the closed in neighbourhood and acts as a guardian of sorts.

⁷⁶ In recent years a new company was created called *Infraestruturas de Portugal* which fused together the former companies EP (Estradas de Portugal – The national road company) and REFER (Rede Ferroviária Nacional – the national rail company). REFER was initially the company that took over certain sectors that were formerly under the jurisdiction of the CP (Comboios Portugal).

⁷⁷ Information about the neighborhood taken from the article consulted on 10/11/2016: http://diariodigital.sapo.pt/news.asp?id_news=312207

⁷⁸ <https://www.publico.pt/local-porto/jornal/bairro-da-cp-em-viana-vai-ser-um-condominio-de-luxo-21792910> retrieved 21/10/2016.



Fig. 30 - Top view of the CP Neighbourhood
(source: Viana3D)



Fig. 31 - Front perspective of the CP neighborhood
(source: Viana3D)

The CP Neighbourhood 3D model was used to create 360 renders to be viewed through VR Viewers such as I AM Cardboard with the base point being the centre garden in the middle of the neighbourhood. The Model was also shown in Hologram form showing the exterior views of the neighbourhood projected on an acrylic pentagonal pyramid structure. Renders of the various view of the neighbourhood were made for easy viewing. A simple video showing a circuit through the neighbourhood gives the viewer an idea of the content of the model.

The Station Master's House

Although in this instance The Station Master's House was never built due to the CP Neighbourhood Project being filed away, the same project was used as a base for **[Casa do Chefe das Obras]** The Work Master's House constructed near the original location (José Espregueira Road). There exist two versions of the house: that which was constructed (featured on the left in the image below) and another which was not. Some of the main differences at first sight are in the positioning of the windows and the elements of stone.



Fig. 32- A comparison of the proposal and the constructed building
(source: Viana3D)

6.2.1.2 The story of a corner

The evolution of the urban structure of the city of Viana do Castelo was evidenced in the creation of the Conde de Carreira Avenue (and in later years the necessity of widening it) and the creation of the Main Avenue (Avenue Combatentes da Grande Guerra). Both constructions required certain demolishing of existing buildings, green spaces and public squares.

There existed a necessity to construct at the junction of the Avenida dos Combatentes with the Avenida Conde Carreira, on the corners buildings that were important in terms of function and physical appearance. On the left hand side / west side was built the Post Office that catered to all communicational needs of the time: post, telegraph and telephone. On the right hand /east side there have been numerous proposals that in some cases have come into existence for a certain amount of time and others that have remained on paper.

This is an overview of that corner:

- 1 – The “Tiny Houses”
- 2 – A proposal
- 3 – The Tower Construction
- 4 – The proposal that could have been
- 5 – The palace of justice

1-The “Tiny Houses”

There existed a collection of simple constructions referred to as the “tiny houses” due to their size which were later demolished to make way for the larger fire station. The function of these houses would have been residential on the upper floors with commerce or storage (which was typical of buildings in the area due to the proximity of the river and dock). Evidence of these constructions is in the form of photographs of that time, mainly when they were being destroyed to build the more imposing structures that were considered more adequate for the main avenue of the city.



Fig. 33 - 3D modulation of the houses done by Viana3D
(source: Viana3D)



Fig. 34 – The corner before demolition started
(Source: _)

2- A proposal

One of the better known architects of the modernist movement, José Fernandes Martins, created a proposal for the headquarters for the volunteer fire fighters of Viana do Castelo (Sede À Associação Humanitária dos Bombeiros Voluntários de Viana do Castelo) (FERNANDES, 2007, p187). The fire station was supposed to be a corner building with two symmetrical wings (one on the Avenida Conde Carreira and the other on the Avenida dos Combatentes da Grande Guerra) with a tower.

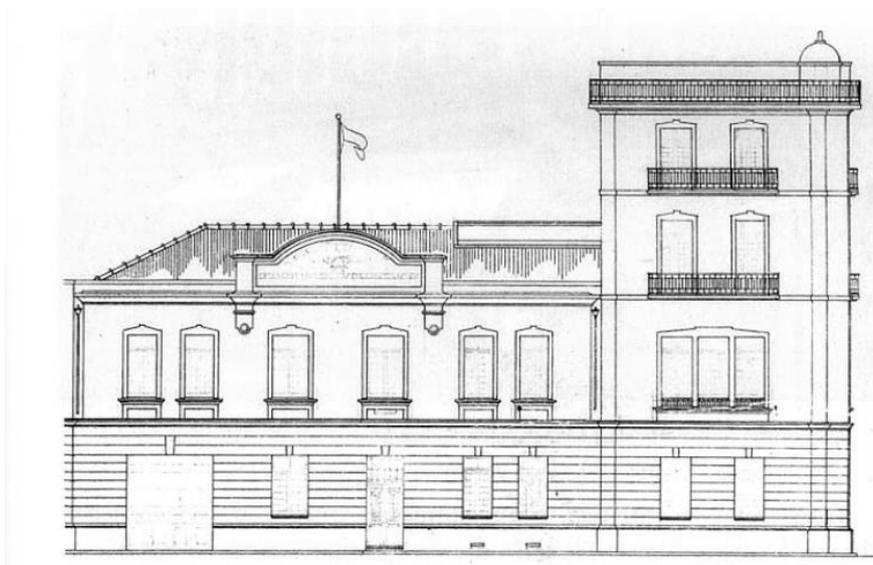


Fig. 35 – Proposal for the Headquarters for the volunteer firefighters
(source: Fernandes 2007)

3- The Tower Construction

The construction was started on the building but only got as far as completing the tower before it was halted and torn down in the 1940s. The only evidence of its existence is some old photographs that belong to the fire station of Viana do Castelo or in private collections and the technical plans that were filed away in the city archives or shown in research articles about the author.



Fig. 36 - Vida por Vida (Life for Life) postcard of the fire station and 3D model (source: private collection and Viana 3D)

4-The proposal that could have been

There existed a proposal that was never constructed for a building that would cater to commerce on the ground floor and housing on the upper levels. The visual image of the building was evidence of the times, the '50s, which was the transitioning of Art Nova to the Modern Movement. It was made up of four stories and a tower.⁷⁹ This allocation of



⁷⁹ Gulías et al. (2014) conference paper, “As Não Cidades: o que poderia ter sido e não foi”.

the use of the building was evident in other examples constructed along the main avenue.

5- The Palace of Justice

Palácio de Justiça / Tribunal Judicial de Viana do Castelo is the judicial court of Viana do Castelo. It was inaugurated in 1959 although building commenced in 1951. Project of the architect Francisco Augusto it followed the style of the New State (Novo Estado) architecture adapted to the traditions of Viana do Castelo but with Manueline suggestions⁸⁰.



Fig. 38 – The Courthouse the now occupies the corner of the main avenue (source: author).

⁸⁰ Fernandes (1999) p.103-4.

6.2.1.3 Fuel pump: Coelho & Brandão Garage

The Garage of Coelho & Brandão otherwise known as the Avenue Garage was built in the 1930s by the author Jose Fernandes Martins⁸¹. There exists little to no available information about the appearance of the fuel pump that was located in front of the garage. One of the main sources of proof of the fuel pump is photographs of that time that reside in private collections.

The fuel pump was in later years removed and nowadays the garage does not function as a garage though it has kept its façade with the title Garagem Avenida, but as a supermarket called Froiz. There exist plans that were filed with the city council for the construction of the garage that included a building that was attached to the garage. This structure was never built but was substituted with a gate that continues to stand till this day.

The façade of the Garage is entirely made out of granite which is considered a point of interest for the time when it was constructed.⁸² The stonework has maintained the same although the windows have been altered.



Fig. 39 – The Garage Coelho & Brandão with the add-on structure that was never built and what was constructed.

(Source: Viana3D)

⁸¹ According to Carneiro 2007, which references Jose Fernandes Martins as the author of the garage.

⁸² According to Carneiro (1999) on p102, when he refers to various buildings by the same author that have interesting façades.



Fig. 40 - View of the school with the fuel pump in the right-hand corner of the image
(source: private collection)

6.2.2 The Altered

As time advances so do cities evolve and alterations take place. Some buildings suffer simple and slight alterations that don't take away from the overall image that was initially created or from their initial function. Although there do exist cases where the only proof of the past are in photographs, postcards, paragraphs written in historical reference books or filed away technical drawings.

6.2.2.1 Escola da Avenida

The Avenue School or Escola Dr. Alfredo de Magalhães was a project by the architects Baltazar de Castro and Rogério de Azevedo. Work started on the building in 1928 and ended in 1933. One notable feature is the statues of the boy and girl that are located in front of the school, representative of the children who were educated separately depending on their sex.

Other impressive features are the two large panels of tile (azulejo) in blue that depict the Discoveries, specifically excerpts from the book “Os Lusíadas”⁸³ that are synonymous with the city of Viana do Castelo. In November 1997 remodelling and enlarging of the school altered the entrance and security of the school which was reopened in January 1999 (FERNANDES, 1999, p101).



Fig. 41 – Render of the Avenue School before the gardens were altered.
(Source: Viana3D)

6.2.2.2 CTT

CTT stands for the former title of “Correiros, Telégrafos e Telefones” which means “Post, Telegraph and Telephone” in Portuguese and is the national postal service. The full title was used on the original structures to make it easier for customers to find the building, nowadays of the three parts of the original name; the post is the main

⁸³ “Os Lusíadas” or The Lusiads is an epic narrative poem by Luis Vaz de Camões written in the XVI century that is considered to be an important part of Portuguese literature that depicts the history of the Portuguese people at the time of The Discoveries.

function of the service which is how the service is now recognised: CTT – Correios de Portugal.

Built from scratch in 1933 by the architect Rogério de Azevedo along Modernist lines, it served as the post office, telegraph and telephone services. It was inaugurated on the first of December 1934; it is located at the top of the Main Avenue. Some years after being constructed it suffered certain alterations that simplified the visual aspect of the exterior. One of the alterations includes the disappearance of the clock on the tower face. In recent times, when the avenue sidewalks were altered, the CTT added a ramp making the post office accessible for all.



Fig. 42 – The CTT building
(source: Viana3D)

6.2.2.3 The Chocolate Factory

Built in 1922 by the architect José Fernandes Martins, the Chocolate Factory was the installation for the chocolate company “A Vianense”. In 2004 the factory was relocated to Barcelos and the building was left empty until recent years when it was rehabilitated by the architectural firm of Jorge Branco Cavaleiro with Carina Viana to become the chocolate themed hotel, restaurant and interactive museum⁸⁴.

⁸⁴Information from the official website of the chocolate factory, consulted on 10/11/2016: http://www.fabricadochocolate.com/sobre-nos/a-nossa-historia_14



Fig. 43 The Chocolate Factory model by Viana3D and the Chocolate Hotel today (source: Viana3D and author)

6.2.2.4 Bento Alves house

Located on the corner of the Main Avenue and Luís Jácome Road, it can be considered one of the more elegant structures to line the Main Avenue. Work of the architect José Fernandes Martins.

The original building was altered in the latter half of twentieth century to add height in the form of a “mushroom”.



Fig. 44 – The original building of Bento Alves before the alteration (source: VianaD)

6.2.2.5 Dr. Tomás Meira

The house of Dr. Tomás Meira was originally constructed with the façade facing Manuel Espregueira Road. The creation of the new main avenue from the train station to the river side caused the demolition of certain buildings. Around the 1930's, the building and its neighbor were taken apart and reconstructed to merge as one on the Main Avenue with a much narrower width and giving Manuel Espregueira Road a larger entry-way.

The most notable features of this newly merged construction were the windows: some are double arched casement windows that are located on two sides of the building and simple square casement windows, and a single larger Manueline decorated balcony doors that feature in the façade facing the Manuel Espregueira Road. The addition of the parapet-styled border on the roof gives the building an older air.



Fig. 45- The buildings before the merge, the projected option of the building and the final structure as is nowadays
(source: Cadernos Vianenses, Tomo VI, 1981, p195 and Viana3D FB).

6.2.3 The Destroyed

These are the buildings that have been destroyed, have disappeared or been left to ruin.

6.2.3.1 Caixa Geral de Depósitos

The building for Caixa Geral de Depósitos (a bank) was initially projected by Raul Martins who at the time worked for the institution. One of the versions for the building had a statue over the main entrance and certain decorative panels in the interior that were to be created by Joaquim Lopes, a painter and professor of the School of Fine Arts in Porto, chosen by the architect. The statute was to be created by António Costa and was representative of Fortune.

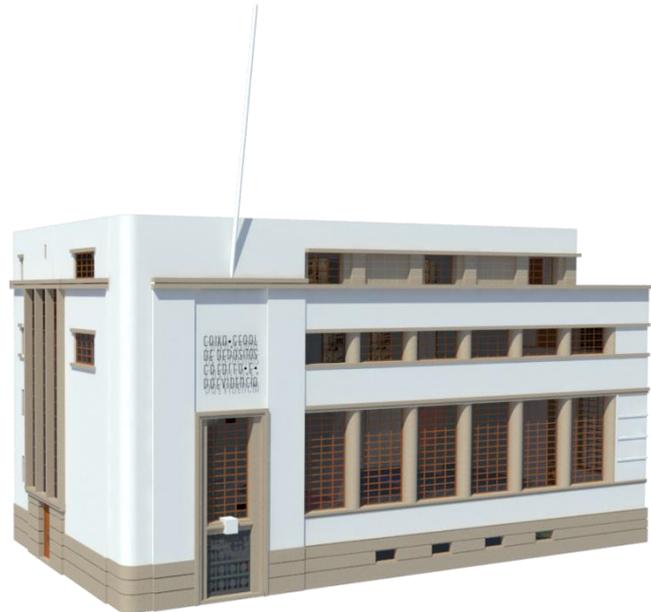


Fig. 46 – Render of the Caixa Geral de Depósitos Viana do Castelo branch original building (source:Viana3D).

After Raul Martins death, the project was continued by the architect António Manuel Veloso Reis Camelo who made some alterations to the plans for the building. One of the most notable alterations was the removal of two of the five windows located on the top level of the building that would create better harmony for the interior divisions of the work spaces. City Hall opposed this alteration and as a compromise the architect proposed two options to fill in the spaces where the windows should have been located. One option was the creation of two sculpted scenes representative of commerce and industry or a *Forro de Cantaria* – collection of small slabs of stone – that was a cheaper option.

The building of the Viana do Castelo branch of the Caixa Geral de Depósitos opened its doors on 14 February 1938 after various set-backs and delays in the completion of the construction. The main features of the building included the use of granite, the main door decorative iron with the granite statue of Fortune above it.

Twelve years after the start of construction of the building, the installations were found to be inadequate for the services that *Caixa* was providing. Alterations and remodelling were to be done to the interior and would require work done on the exterior as well.



Fig. 47 – The Viana do Castelo branch of Caixa Geral de Depósitos after the alterations (left) and the new version of the building in 1983 (source: Caixa Geral de Depósitos).

Caixa then went on to acquire the building next door to the Viana do Castelo branch and in 1983 the amplification and remodelling of the structure was done⁸⁵.

⁸⁵ Information about the Viana do Castelo branch of Caixa Geral de Depósitos was taken from the pdf located on their website in the Heritage section, available at: <https://www.cgd.pt/Institucional/Patrimonio-Historico-CGD/Patrimonio-em-destaque/Documents/Filial-de-Viana-do-Castelo.pdf>

6.2.3.2 The Old Municipal Market

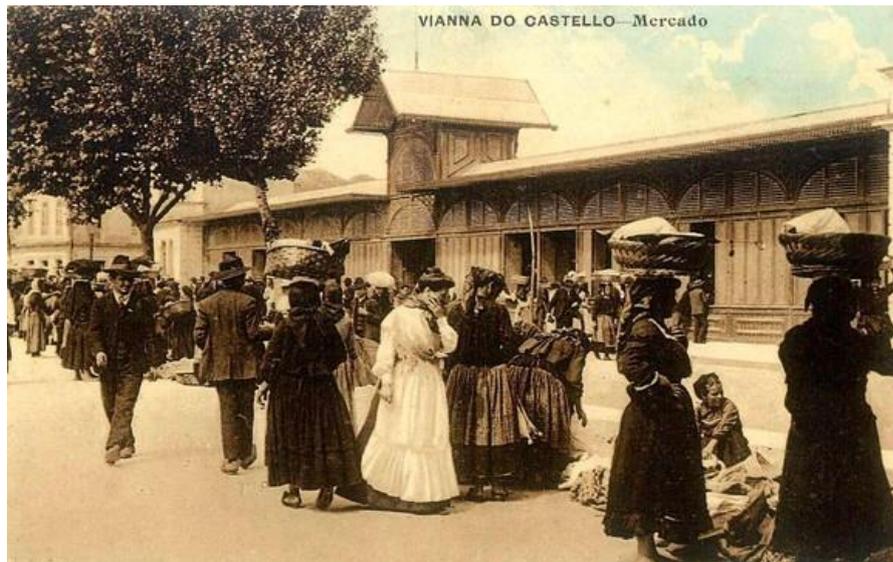


Fig. 48 – The Municipal Market on market day
(source: Gonçalves, Albertino (2011) p10)

Market day was an important event in Viana do Castelo. Initially when Viana was still a medieval walled villa, the market took place within the walls, mainly along the Rua do Poço⁸⁶. In the early days market-day was held on a Thursday every second week, being one of the first fixed occasions of this type in Portugal (CARVALHO 2005, p32). With the expansion of the vila outside the walls, principal trade and market sectors were relocated; bakeries near the townhall and jail and the fish market near the docks where the Hotel Aliança now stands. The Praça do Campo do Forno (the Republic Square nowadays) was the civic center where the market and municipal administration was located.

In 1610 the fortnightly market was moved to by the riverside which became known as the Largo da Feira (Mercado do peixe/ the fish market). Due to the success and significant economic activity that the market had, it justified asking the king to transform market-day into a weekly event which occurred in mid-1823. Now occurring every Friday, the market was transferred in 1881 to the Largo do Príncipe near the convent of Sao Bento (CARVALHO 2005, p34).

The Old Municipal Market (Antigo Mercado Municipal) was also commonly known as the Mercado dos Torreões (the market of towers/turrets).

Located near the Largo das Almas (with the Chapel of Souls) and the São Bento Church, it was ideal because it was close to the dock which was the transitioning point between

⁸⁶ Rua do Poço which translates to the Road of the Well was where a well which provided water for the walled city was located.

land and river (REIS, 2008). To be able to construct the market (construction started in 1890) some parts of the São Bento church had to be altered or demolished⁸⁷. The project was elaborated by the engineer Henrique Pereira Pinto Bravo and inaugurated at the end of 1892. It was a solid square typical construction of granite with four towers at the corners and two main gates. Officially until 1908 it had the name Mercado do Príncipe Real (the market of the Royal Prince) after the praça in which it was located. It was baptised the Mercado D. Manuel II in honour of the visit of the last reigning king of Portugal, which was used until 1910. The Mercado dos Torreões was the most popular name in reference to the architectural features of the towers.

The four towers of the market housed the beef butchers. The two main façades housed small shops known as “*barracas*” (stalls) from fruit sellers to umbrella repairing, eateries to specialized butchers. On the inside of the Market, the West side was for selling fish while the East was for vegetables.

The Municipal Market of Viana do Castelo (Mercado dos Torreões) was used from 1892 until 1965⁸⁸. The weekly-market was moved from the building to Jardim D. Fernando in 1960, in 1972 it was moved indefinitely to the Campo da Agonia.

In 1972 the property was sold for construction purposes and on which was built the Prédio Coutinho which is a high-rise residential building which initially was not supposed to be built with so many floors. Considered to be the largest visual intrusion and most controversial structure ever built in the city of Viana do Castelo (CARVALHO 2005, p46). As of the year 2000 it has been planned for demolition although the structure still continues to this day.

The Old Market exists on postcards and photographs taken at the time when it stood tall and functioning, there have been various articles and books published about or in reference to it; one of the most frequented and known buildings. Curiously enough images of the market are mostly of the exterior of the building, whether on market day or not, and relatively few exist of the interior which contained rows of trees⁸⁹.

⁸⁷ The church had suffered some degradation due primarily to being flooded by the Lima River in previous years and was being rehabilitated (CARVALHO, 2005).

⁸⁸ <https://olharvianadocastelo.blogspot.pt/2011/01/mercado-municipal-de-viana-do-castelo-o.html> consulted 21/10/16.

⁸⁹ The photographs that do exist of what was in the interior of the courtyard of the Old Market were primarily taken when the market itself was demolished and the Coutinho Building (Prédio Coutinho) was starting to be constructed. <https://www.facebook.com/Viana3D/posts/854362214688681> consulted 13/03/2018.



Fig. 49 – 3D model of the old Municipal Market
(source: Viana3D FB)

In 1891 municipal architect António de Magalhães Moutinho proposed two projects for the interior of the market. The proposals were to be located amidst the trees and consisted of two kiosks for ticket sales and a pavilion in the centre. The projects differed in relation to the pavilion in the centre.



Fig. 50 – The two proposals for the central pavilion of the market
(source: Viana3D FB)

One proposal had a pavilion that was an octagonal floor plan with two stories; the ground floor for bathrooms and the sides of the top floor for the clock. The detail on the building was more decorative especially along the edges of the roof.

The other proposal was similar to the structure of the market towers being four-sided with the same lines and shapes of the doors and the use of stone. The superior part of the pavilion differed from

the towers due to the pointed roof and the stonework around the clock faces which added height to the structure.

Due to the lack of documentation, the interior of the market and what was constructed within the four sides of the building can be speculated on.

6.2.3.3 Saint Francis of the Mountain

The Convent of Saint Francis of the Mountain was built on the side of the mountain of Saint Luzia in Viana do Castelo at the end of the XIV century.

The convent now belongs to IPVC (The Polytechnic Institute of Viana do Castelo) which was sold by the city council after it had been abandoned and left to the elements to degrade and be reclaimed by nature.

Viana3D brought the Convent back to life virtually.



Fig. 51 – The Convent of Saint Francis of the Mountain comparison with Viana3D remodeling and how it is today
(Source: Viana3D)

Chapter 7 - Conclusions

The information in this document is a result of research compiled from three main sources. Firstly, from the time the author of this thesis was a collaborator on the Viana3D project where she modulated various buildings in 3D models after researching information in the form of technical drawings, photographs, etc. Secondly, from information already assembled by the Viana3D team members and given in interviews. And lastly, from materials such as photographs, technical drawings, and historical information researched at archives, in books based on the city and the local architecture, thesis and articles related to the theme and webpages.

One of the main aims of this project was to compile information about the city of Viana do Castelo and its architecture, allowing people to find this kind of information in an easier and direct way in the universal language of English. The architecture of the city is an asset in terms of local heritage/patrimony transmitting the historical styles and showing the work elaborated by Portuguese architects, since the first location of the citadel⁹⁰ on the Santa Luzia Mountain to the alterations that have occurred in the XXI century.

The research and analysis of the history of the city of Viana do Castelo helped to better understand how the city evolved and gave a clearer picture about some buildings that Viana3D has modulated. A case in point is the creation of the Main Avenue from the train station to the river that caused destruction of some architecture and the creation of mixed architectural styles. Specifically the location of the Palace of Justice at the top of the Avenue opposite the CTT building; before finally building the courthouse, there existed various other constructions and proposals that were never built that depict an interesting history of the corner.

In terms of the Viana3D project, this thesis is an asset as it joins the various social media and networks, displaying the work and evolution of Viana3D in one location. It compiles the various news articles that refer to the project, published papers and events/public displays. Viana3D can be used as a tool to attract tourists to visit various locations in the city of Viana do Castelo, based on the 3D models that show the heritage/patrimony of architecture.

The thesis strengthens Viana3Ds' online presence and creates new opportunities with the creation of the WordPress.com website. The website contains various aspects of Viana3D from a brief summary of its evolution, to the location of the city of Viana do Castelo as well as news. An important characteristic of the content of the website is the

⁹⁰ As referred before, the citadel was founded between the Iron and Romanization Ages.

evolution of the before and after of certain 3D models of buildings. The 3D models are divided into three main categories based on their history: CITCOHAB⁹¹, the Altered and the Destroyed.

A questionnaire was created to gather feedback from users about the website and how they came to know about the Viana3D project. The questionnaire was posted online using Google Forms and was available in English and Portuguese because although the website is in English it is based on a Portuguese city. A post was created that included a screenshot of the website, the website link and a request for the public to visit the website and then answer the questionnaire. The information was posted on Facebook, Instagram and Google+ and it was found that although people liked the post they did not necessarily visit the website or they visited the website homepage and did not answer the questionnaire.

That being the case observed in the first few days of posting, another approach was taken in the form of direct messaging contacts on social networks to visit the website and participate in answering the questionnaires. The results collected were from a six day span and twenty participants. Most participants knew about the Viana3D project before visiting the website from either school or friends that were associated with the project. According to the questionnaire answers, more than half had visited the Viana3D Facebook page before and a couple had seen the Google+ profile. Unanimously the participants found the website easy to access, with interesting content that was easy to understand in English.

In relation to the Polytechnic Institute of Viana do Castelo (IPVC) this thesis project follows the aims of the school by transferring knowledge that can be read by international students wanting to know about the city of Viana do Castelo and also about a project based on the city – Viana3D.

This project shows the possibility and result of interdisciplinary work; the elaboration of the document and the creation of the website are proof of skills, strategies and methods learnt throughout the various classes taken at the school and put into practice.

⁹¹ As already mention CITCOHAB stands for the “City That Could Have Been” and are project proposals that were never built.

Chapter 8 - References

8.1 Books

ABREU, Alberto A. (2009 a). *História de Viana do Castelo* 3ºVol. 1º Tomo. Viana do Castelo: Câmara Municipal.

ABREU, Alberto A. (2009 b). *História de Viana do Castelo* 3ºVol. 2º Tomo. Viana do Castelo: Câmara Municipal.

ALEXANDER, Christopher et al. (1977) *Pattern Language*. New York: Oxford University Press.

BAUMAN, Zygmunt (2000) *Liquid Modernity*. USA: Polity Press.

FERNANDES, Francisco José Carneiro. (1995). *Geografia e Memórias da Baixa Vianense, Comércio – Serviços – Património*. Edição: Centro dos estudos Regionais, Viana do Castelo.

FERNANDES, Francisco José Carneiro. (2007). *José Fernandes Martins – Arquitecto da modernidade vianense*. In *Cadernos Vianenses*, Tomo 40, (pp137-190) Viana do Castelo, Viana do Castelo.

FERNANDES, Francisco José Carneiro. (1999). *Tesouros de Viana – Roteiro Monumental e Artístico*. Edição do Grupo Desportivo e Cultural dos Estaleiros Navais de Viana do Castelo. Viana do Castelo.

FERNANDES, José Carneiro. (1990). *Viana Monumental e Artística – Espaço urbano e património de Viana do Castelo*. Edição do Grupo Desportivo e Cultural dos Estaleiros Navais de Viana do Castelo, E.P. Viana do Castelo.

FERNANDES, Mário Gonçalves. (1992). “Viana do Castelo: obras públicas e evolução do espaço urbano (1855-1926)”, *Revista da Faculdade de Letras – Geografia I*, Vol. VII, pp. 65-162.

FILGUEIRAS, Antero. (1979). *Aponte de Madeira*. In *Cadernos Vianenses*, Tomo 2 (pp45-49). Viana do Castelo: Câmara Municipal de Viana do Castelo.

LOPES, J.d., GULÍAS, M.R., & CAVALEIRO, R.B. (2013). *Modernismo Urbano Revisitado. O caso de Viana do Castelo*. In *Cadernos Vianenses*, Tomo 47 (pp157-188). Viana do Castelo: Câmara Municipal de Viana do Castelo.

LOPES, J.d., GULÍAS, M.R., & CAVALEIRO, R.B. (2015). *Os Bairros do Modernismo Urbano no Planeamento Urbanístico e na Organização dos Equipamentos Sociais da Cidade de Viana do Castelo*. In *Cadernos Vianenses, Tomo 49 (pp183-206)*. Viana do Castelo: Câmara Municipal de Viana do Castelo.

MARQUES, Vasco (2015) *Marketing Digital 360*. Coimbra: Conjuntura Actual Editora.

REIS, Hugo de Amorim (2008) *Evolução da estrutura urbana de Viana do Castelo – Factores de transformação e elementos de continuidade*. Universidade Fernando Pessoa- Faculdade Ciências e Tecnologias, Porto. Outubro 2008.

REIS, António Matos (1993). *Viana, A Cidade Através do Tempo*. In *Cadernos Vianenses, Tomo 16 (pp13-30)*. Viana do Castelo: Câmara Municipal de Viana do Castelo.

VIANA, António Manuel Couto (2002) *Lendas do Vale do Lima*. Ponte de Lima: Valima - Associação de Municípios do Vale do Lima, p. 53-54.

8.2 E-Books or PDF

GOMES, Helena Real (2016). *Filiais e Agências – Filial de Viana do Castelo*. Gabinete de Património Histórico da CGD. Retrieved 22/06/2017 from <https://www.cgd.pt/Institucional/Patrimonio-Historico-CGD/Patrimonio-em-destaque/Documents/Filial-de-Viana-do-Castelo.pdf>

GONÇALVES, Albertino (2011). *A idade de ouro do postal ilustrado em Viana do Castelo*. Retrieved 08/06/2017 from <https://repositorium.sdum.uminho.pt/bitstream/1822/29992/1/MOliveira%2312.pdf>

GULÍAS, M.R., GONÇALVES, A.R., MIRANDA, M.V., SAMPAIO, N.F., & FARIA, N.D., “As não cidades: O que poderia ter sido e não” in World Congress on Communication and Arts in 2014[On-Line], retrieved 15/11/2015 from <http://proceedings.copec.org.br/index.php/wcca/article/view/2061>

LEE, Gun A et al. (2012) *CityViewAR: A Mobile Outdoor AR Application for City Visualization*. New Zealand: s.n., retrieved 16/03/2015. <http://www.hitlabnz.org/index.php/products/cityviewar>

LYNCH, Kevin (1960). *The Image of the City*. United States of America: The Technology Press & Harvard University Press. Retrieved 19/10/2016 from <http://italianstudies.nd.edu/assets/68866/lynch.pdf>

PAPAGIANNIS, Helen (2017) *Augmented Human: How Technology is Shaping the New Reality*. United States of America: O'Reilly Media.
Consulted on 15/03/2018 from https://books.google.pt/books?id=hFoxDwAAQBAJ&pg=PA1&source=gbs_toc_r&cad=4#v=onepage&q&f=false

PINHO, Isabel, M. R. (2006-2007) *Os crúzios de Viana do Castelo e a sua expressão artística*. Revista da Faculdade de Letras, CIÊNCIAS E TÉCNICAS DO PATRIMÓNIO, Porto I Série vol. V,VI, pp. 467-487. Retrieved 19/01/2016 from: <http://ler.letras.up.pt/site/geral.aspx?id=3&tit=Lista%20de%20t%C3%ADtulos&tp=2&l=0>

8.3 Website or Webpage

AltoMinhoTV (21/01/2016) *Escola em Viana dá três dimensões a ponte de Leonardo da Vinci que nunca saiu do papel*. Retrieved 26/01/2018 from <http://www.altominho.tv/index.php/noticia/?slug=677-escola-em-viana-da-tres-dimensoes-a-ponte-de-leonardo-da-vinci-que-nunca-saiu-do-papel>

Ao Norte. Associação de Produção e Animação Audiovisual (2014) *XIV Encontros de Cinema de Viana do Castelo*.

Retrieved 01/06/2017 from <http://www.ao-norte.com/encontros/2014/encontros.php>

AR stories (n.d.) *Augmented Reality projects, articles & talks by Dr. Helen Paggiannis, Ph.D.* Retrieved 20/09/2017 from <https://augmentedstories.com/>

Baron, Brenda (n.d.) *A Short History of Bloggin*. Retrieved 29/03/2018 from <https://blogging.com/history/>

Behance (20/07/2014) *Raiooo – Electric Wooden Tricycle*. Retrieved 19/03/2016 from <https://www.behance.net/gallery/18474629/RAIOOO-Electric-Wooden-Tricycle>

Beleza, Alfredo (21/06/2014) *Rewind Cities Lisbon: a app onde o passado se torna presente*. Retrieved 28/01/2018 from <http://www.techenet.com/2014/06/rewind-cities-lisbon-a-app-onde-o-passado-se-torna-o-presente/>

Câmara Municipal de Viana do Castelo (n.d.) *Exposição VIANA3D*. Retrieved 15/02/2016 from <http://www.cm-viana-castelo.pt/pt/agenda-cultural/exposicao-viana-3d>

Câmara Municipal de Viana do Castelo (n.d.) *Caminhos de Santiago – Caminho Português da Costa*. Retrieved 09/01/2018 from <http://www.cm-viana-castelo.pt/pt/caminhos-de-santiago-caminho-portugues-da-costa>

Câmara Municipal de Viana do Castelo (n.d.) *Inauguração da Rua Arquitecto José Fernandes Martins*. Retrieved 14/02/2017 from <http://www.cm-viana-castelo.pt/pt/noticias/inauguracao-da-rua-arquiteto-jose-fernandes-martins>

Câmara Municipal de Viana do Castelo – Gabinete de Imprensa (02/03/2009) *Revista londrina considera Viana do Castelo "Meca da Arquitectura"*. Retrieved 23/11/2015 from <http://www.cm-viana-castelo.pt/pt/noticias/revista-londrina-considera-viana-do-castelo-qmecca-da-arquitecturaq-2>

Câmara Municipal de Viana do Castelo (n.d.) *Romaria da N^a S^a da Agonia*. Retrieved 15/11/2015 from <http://www.cm-viana-castelo.pt/pt/festas-da-sr-da-agonia>

Câmara Municipal de Viana do Castelo (n.d.). *Roteiros Temático*. Retrieved 15/11/2015 from <http://www.cm-viana-castelo.pt/pt/roteiros-tematicos>

Carlson, Nicholas (05/03/2015) *At last – the full story of how Facebook was founded*. Retrieved 02/03/2018 from <http://www.businessinsider.com/how-facebook-was-founded-2010-3>

Carlson, Nicholas (13/04/2011) *The Real History of Twitter*. Retrieved 10/03/2018 from <http://www.businessinsider.com/how-twitter-was-founded-2011-4>

Centro de Estudos Ataíce Oliveira (n.d.) *Lenda de Viana*. Retrieved 21/02/2018 from <http://www.lendarium.org/narrative/-461/>

Centro de Estudos Ataíce Oliveira (n.d.) *A lenda de Viana do Castelo*. Retrieved 21/02/2018 from <http://www.lendarium.org/narrative/a-lenda-de-viana-do-castelo/>

CERN (n.d.) Retrieved 26/02/2018 from: <https://home.cern/about>

Chapman, Cameron (14/04/2011) *A brief history of blogging*. Retrieved 10/02/2018 from <https://www.webdesignerdepot.com/2011/03/a-brief-history-of-blogging/>

Correio do Minho (25/01/2016) *Viana 3D começa com Rogério de Azevedo e encontra Leonardo da Vinci*. Retrieved 26/01/2018 from

<https://www.correiodominho.pt/noticias/viana-3d-comeca-com-rogerio-de-azevedo-e-encontra-leonardo-da-vinci/92134>

Cruz, Andrea (_/01/2016) *Antigo Mercado de Viana que deu lugar ao prédio Coutinho ganha três dimensões em projecto do Politécnico*. Retrieved 26/01/2018 from <http://radioaltominho.pt/Noticias/antigo-mercado-de-viana-que-deu-lugar-ao-predio-coutinho-ganha-tres-dimensoes-em-projeto-do-politecnico/>

Cruz, Andrea (08/04/2011) *Bairro da CP em Viana vai ser um condomínio de luxo*. Retrieved 21/10/2016 from <https://www.publico.pt/local-porto/jornal/bairro-da-cp-em-viana-vai-ser-um-condominio-de-luxo-21792910>

dafont.com (n.d.) Retrieved 20/05/2017 from <https://www.dafont.com/pt/>

Diario Digital (n.d.) Retrieved 10/11/2016 from http://diariodigital.sapo.pt/news.asp?id_news=312207

Fabrica do Chocolate (n.d.) *Sobre nos*. Retrieved 10/11/2016 from http://www.fabricadochocolate.com/sobre-nos/a-nossa-historia_14

Facebook (n.d.) *Design@IPVC"14 #Viana3D*. Retrieved 19/03/2016 from <https://www.facebook.com/media/set/?set=a.335815333210041.1073741835.228534577271451&type=3>

Facebook (n.d.) *Viana3D*. Retrieved 16/11/2015 from <https://www.facebook.com/Viana3D/>

Facebook (n.d.) *Raiooo*. Retrieved 19/03/2016 from <https://www.facebook.com/raiooo.medein>

Facebook (n.d.) *Rewind Cities Lisbon*. Retrieved 21/03/2018 from <https://www.facebook.com/rewindcitieslisbon/>

Forbes (22/10/2012) *Ben Silbermann On How Pinterest Slowly Grew To Massive Scale*. Retrieved 20/02/2018 from <https://www.forbes.com/sites/tomiogeron/2012/10/22/ben-silbermann-on-how-pinterest-slowly-grew-to-massive-scale/#6d9409962a81>

GoOPORTO (n.d.) *Homepage*. Retrieved 02/02/2018 from <http://www.gooporto.com/>

GoOPORTO (n.d.) *PORTO TOURISM GUIDE |Visiting one of Europe's most charismatic cities and the Douro Valley -- Two World Heritage Sites*. Retrieved 12/12/2015 from <http://www.gooporto.com/>

Google (n.d.) *From the garage to the Googleplex*. Retrieved 20/02/2018 from <https://www.google.com/about/our-story/>

Google Maps (n.d.) Viana do Castelo District – Imagery © 2018 Google, Data SIO, NOAA, U.S. Navy, NGA, GEBCO, Map data © 2018 Google. Retrieved 20/02/2016 from <https://www.google.pt/maps/place/Viana+do+Castelo+District/@41.6906164,-8.8423825,2361m/data=!3m1!1e3!4m5!3m4!1soxd250a7fofd44313:ox300ebbde4902d10!8m2!3d41.6918046!4d-8.834451>

Google+ (n.d.) *Viana 3D IPVC*. Retrieved 20/02/2016 from <https://plus.google.com/u/o/105343883464099247207>

Gould, K. (19/11/2015) *Porto city guide: what to see plus the best hotels and restaurants and bars*. Retrieved 12/12/2015 from <http://www.theguardian.com/travel/2015/sep/19/porto-city-guide-hotels-restaurants-bars>

Home of the first website (n.d.) Retrieved 26/02/2018 from <http://info.cern.ch/>

I Am Cardboard (n.d.) Retrieved 19/03/2016 from <http://www.imcardboard.com/>

Infraestruturas de Portugal. (n.d.) *Sobre Nós*.

Retrieved 01/06/2017 from <http://www.infraestruturasdeportugal.pt/sobre-nos>

Instagram (n.d.) Retrieved 02/03/2018 from <https://www.instagram.com/about/us/>

Instituto Politécnico de Viana do Castelo (05/05/2014) *Computação Gráfica e Multimédia – XII Jornadas de Computação Gráfica e Multimédia Maio 2014*. Retrieved 15/02/2016 from <http://www.ipvc.pt/xii-jornadas-cgm>

Internet World Stats (n.d.) *Internet, Facebook and Population Stats for Europe*. Retrieved 30/03/2016 from <https://www.internetworldstats.com/stats4.htm>

Internet World Stats (n.d.) *Internet, Facebook and Population Stats for Europe*. Retrieved 27/03/2018 from <https://www.internetworldstats.com/stats4.htm>

Julie Dawn Fox in Portugal (n.d.) *Insider Insights For Discerning Cultural Travellers*. Retrieved 02/04/2018 from <https://juliedawnfox.com/>

Lonely Planet (n.d.) *Portugal – Porto is looking behind and ahead*. Retrieved 02/04/2018 from <https://www.lonelyplanet.com/portugal/the-north/porto>

MacArthur, Amanda (07/11/2017) *The Real History of Twitter, In Brief. How the micro-messaging wars were won.* Retrieved 26/03/2018 from <https://www.lifewire.com/history-of-twitter-3288854>

Mar de Viana (02/02/2010) *Ramal da Doca – Acesso Rodoviário ao Porto Comercial.* Retrieved 14/03/2018 from <http://maolmar.blogs.sapo.pt/29751.html>

Melo, Leandro (26/05/2016) *Porto ponto. Uma cidade com identidade.* Retrieved 20/12/2017 from <http://www.designculture.com.br/portoeponto>

Merriam-Webster (n.d.) Retrieved 26/02/2018 from <https://www.merriam-webster.com/>

Museu Virtual Viana do Castelo (n.d.) *Resumo Historico.* Retrieved 15/11/2015 from <http://www.mvvc.ipv.pt/index.php?section=17>

Nogueira, Alberto Pinto (29/10/2013) *A ponte de Viana do Castelo e as estórias de Gustave Eiffel.* Retrieved 13/12/2015 from <http://www.publico.pt/local/noticia/a-ponte-de-viana-do-castelo-e-as-estorias-de-gustave-eiffel-1610631>

Olhar Viana do Castelo (n.d.) Retrieved 12/12/2016 from <https://olharvianadocastelo.blogspot.pt/>

Olhar Viana do Castelo (15/01/2011) *Mercado Municipal de Viana do Castelo: O primitivo e o futuro (?).* Retrieved 21/10/2016 from <https://olharvianadocastelo.blogspot.pt/2011/01/mercado-municipal-de-viana-do-castelo-o.html>

Património Cultural – Direção-Geral do Património Cultural (n.d.) *Ruínas da cidade velha de Santa Luzia.* Retrieved 15/02/2018 from <http://www.patrimoniocultural.gov.pt/pt/patrimonio/patrimonio-imovel/pesquisa-do-patrimonio/classificado-ou-em-vias-de-classificacao/geral/view/70271>

PokemonGO (n.d.) Retrieved 19/10/2016 from <https://www.pokemongo.com/en-us/>

Porto. (n.d.) *História da cidade.* Retrieved 12/12/2015 from <http://www.cm-porto.pt/historia-da-cidade>

Ray, Amanda. (22/01/2015) *The Art Institute – The History and Evolution of Cell Phones.* Retrieved 09/01/2018 from <https://www.artinstitutes.edu/about/blog/the-history-and-evolution-of-cell-phones>

Silva, da Teixeira (12/02/2013) *Ramal de Viana-Doca.* Retrieved 14/03/2018 from <http://www.faroldanossaterra.net/2013/02/12/ramal-de-viana-doca/>

Shah, Saqib (14/05/2016) *The history of social networking*. Retrieved 02/03/2018 from <https://www.digitaltrends.com/features/the-history-of-social-networking/>

SuccessStory (n.d.) *Google Inc SuccessStory*. Retrieved 02/03/2018 from <https://successstory.com/companies/google-success-story>

SuccessStory (n.d.) *Yahoo! Inc- SuccessStory*. Retrieved 05/03/2018 from <https://successstory.com/companies/yahoo-inc>

The Caminho Provides (n.d.) Retrieved 27/02/2018 from <https://thecaminoprovides.com/>

Trowbridge, Alexander (16/12/2014) *Evolution of the phone: From the first call to the next frontier*. Retrieved 14/01/2018 from <https://www.cbsnews.com/news/evolution-of-the-phone-from-the-first-call-to-the-next-frontier/>

University of Minnesota Libraries (2017) *Organizational Behavior. 8.4. Different Types of Communication and Channels*. Retrieved 11/01/2018 from <http://open.lib.umn.edu/organizationalbehavior/chapter/8-4-different-types-of-communication-and-channels/>

Valença Município (n.d.) *Valença na história*. Retrieved 13/12/2015 from http://www.cm-valenca.pt/portal/page/valenca/portal_municipal/Turismo/Valen%E7a%20na%20Hist%C3%93ria

Ventura, M. A. (01/10/2012) *Ponte de Lima – Ballads of the passing river*. Retrieved 13/12/2015 from http://upmagazine-tap.com/en/pt_artigos/ponte-de-lima-e28093-ballads-of-the-passing-river/

Viana3D (n.d.) Retrieved 30/03/2018 from <https://viana3d.wordpress.com/>

Vimeo (18/07/2014) Viana3D. Retrieved 19/03/2016 from <https://vimeo.com/viana3d>

Visit Porto (n.d.) Homepage. Retrieved 12/12/2015 from <http://www.visitporto.travel/Visitar/Paginas/default.aspx>

Visit Valença (n.d.) *Homepage*. Retrieved 31/01/2018 from <http://www.visitvalenca.com/>

Visit Valença (n.d.) *História de Valença*. Retrieved 13/12/2015 from <http://www.visitvalenca.com/269>

VRS – Virtual Reality Society (n.d.) *History of Virtual Reality*. Retrieved 03/08/2017 from <https://www.vrs.org.uk/virtual-reality/history.html>

Wallpaper | The stuff that refines you (n.d.) Retrieved 23/11/2015 from <http://www.wallpaper.com/>

WordPress.com (n.d.) Retrieved 20/03/2018 from <https://wordpress.com/about/>

WordPress.org (n.d.) Retrieved 20/03/2018 from <https://wordpress.org/about/>

World Wide Web (n.d.) Retrieved 28/03/2018 from <http://info.cern.ch/hypertext/WWW/TheProject.html>

World Wide Web Foundation (n.d.) *History of the Web*. Retrieved 28/03/2018 from <https://webfoundation.org/about/vision/history-of-the-web/>

XIV Encontros de Cinema de Viana do Castelo (n.d.) *Arquitectura e Cinema_Diálogos*. Retrieved 15/11/2015 from <http://www.ao-norte.com/encontros/2014/arquitecturaecinema.php>

YouTube (n.d.) Retrieved 02/03/2018 from <https://www.youtube.com/intl/en-GB/yt/about/>

YouTube (n.d.) *Viana 3D IPVC*. Retrieved 19/03/2016 from <https://www.youtube.com/user/Viana3DIPVC>

YouTube (20/10/2014) *Design @ IPVC 2014*. Retrieved 19/03/2016 from <https://www.youtube.com/watch?v=VkdmyMP2qM>

Zimmermann, Kim Ann & Emspak, Jesse (27/06/2017) *Internet History Timeline: ARPANET to the World Wide Web*. Retrieved 28/03/2018 from <https://www.livescience.com/20727-internet-history.html>

Chapter 9 Annexes

9.1 Viana3D published papers

9.1.1 As Não Cidades: O Que Poderia Ter Sido E Não Foi

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Abstract : *Cities are living organisms; they are born, grown, setting their identity's throw time. Today cities are also a promotional tool to attract investors and visitors, something that distinguishes them from other cities. Viana do Castelo, is a coastal city with centuries of history were lies a lot of her identity to tell. So why not find in those historical elements, with the support of three-dimensional modeling tools, and give life to projects that have been lost or never materialized to show a reality different from what we know, an identity hidden in history. Based on records of what urban structure could have been, we can see a virtual reality, completely different of the real modern city. The augmented reality tools allows accurate modeling of buildings, making it possible to show this new vision of urban life, on a mobile phone or other equipment, with vast technical and recreational potential.*

Keys Words : 3D, Androi, Cities, Mac, QR Code

AS NÃO CIDADES

Ao se falar da identidade de uma cidade, o senso comum e a nossa própria imaginação leva-nos a viajar para as cidades que a cultura popular define como os dogmas do tema. Paris, Londres, Nova Iorque, um vasto leque de locais, saltam à nossa imaginação. O conceito de identidade da cidade é muito vasto, mas pode-se facilmente concluir que a sua cultura local, a arte que se respira ao chegar a um determinado espaço, a própria postura e relação dos seus habitantes para com as suas estruturas urbanas, bem como a sua história, são em essência os pilares para a definição da identidade da cidade.

Como têm já alguns autores vindo a defender, a cidade um pouco à nossa imagem, será certamente um organismo vivo, nasce, cresce, define-se ao longo da sua vida, a sua identidade depende das escolhas que se tomam, quer a nível socio/cultural, económico ou político. Os ambientes que se criam e a forma como se desenvolvem e interagem com os utilizadores, fazem-se experimentar de forma diferente por cada pessoa, que desenvolve uma relação com o espaço, um registo de memória que

poderá despertar um sentimento de pertença, um conforto próprio de acordo com a sua própria personalidade. A noção e definição é formalizada na forma do projeto de uma cidade. Traduzem-se na formalização das ruas e dos próprios edifícios e demais equipamentos urbanos essa mesma valorização cultural. Será compreensível e inevitável que alguns desses registos urbanos se percam ou nunca cheguem a ser concretizados ao longo da história, por se tornarem obsoletos ou simplesmente por terem dado lugar a novas necessidades com novos equipamentos.

A cada intervenção a identidade da cidade muda ligeiramente, algo antigo se perde e algo novo nasce. Mas inevitavelmente perdem-se memórias pessoais e coletivas, perdem-se pequenos fragmentos da história e aqueles projetos que nunca chegaram a concretizar-se perdem a oportunidade de desempenhar uma das suas mais importantes funções a contribuir para a definição da identidade urbana, para com os seus habitantes e visitantes.

As cidades, ou no caso as não cidades são registos do que a estrutura urbana poderia ter sido, um rumo que poderia alterar completamente a visão e identidade atual da cidade. Os espaços e edifícios são projetados com o objetivo de corresponder a necessidades sociais e organizacionais mas são geralmente aplicadas de forma emotiva e em constante mutação, que inclui princípios como a nossa herança aliada ao nosso património. A cidade assume nos dias de hoje também uma ferramenta promocional para atrair investidores e visitantes, algo que as distinga das demais urbes. As não cidades são ferramentas promotoras dos projetos que se perderam ou nunca foram materializados, elementos puros e intuitivos de uma imagem paralela do que poderia ter sido a identidade urbana, uma dicotomia da contemporaneidade.

Com recurso às inovações tecnológicas como o caso das ferramentas de desenho técnico assistido por computador, bem como e principalmente as ferramentas de modelação tridimensional é possível a reprodução realística

dos espaços urbanos. Tais ferramentas permitem criar cenários virtuais, acessíveis a qualquer pessoa, traduzindo-se numa mais-valia com amplas aplicações turísticas e promocionais bem como um elemento de apoio à investigação e análise na ótica do design, arquitetura e urbanismo.

As potencialidades desta inovação tecnológica permitem o acesso por qualquer sistema operativo Android ou Mac, desde telemóvel, tablet ou qualquer outro equipamento equiparável, tornando-se evidentes as potencialidades na divulgação de informações. Facilmente acessíveis, estas aplicações permitem por exemplo a implantação através de marcadores próprios dos edifícios pensados ou já demolidos em determinada área da cidade, criando toda uma nova forma de turismo.

Com a modelação de imagem em realidade aumentada, será possível analisar e compreender alguns elementos que definem a identidade da cidade, formalizar estudos dos vários componentes que constituem a urbe, podendo inclusivamente ser base de estudo para intervenções futuras na rede urbana ou simplesmente um arquivo histórico digital, com aplicações turísticas e lúdicas.

EDIFÍCIO TRIBUNAL – UM ESTUDO DE CASO, AV.

COMBATES GRANDE GUERRA

Viana do Castelo, originalmente denominada de Viana da Foz do Lima, é uma cidade cujas origens remontam à ocupação humana no período Mesolítico, do qual sobrevive ainda a citânia de Santa Luzia, cidadela pré-romana no cume da montanha com esse nome. Ao longo da história a imagem das demais povoações de características medievais desenvolveu-se cercada por fortificações nas imediações do rio, assumindo uma forma arredondada com os poderes administrativos e religiosos locais ao centro, e ligações estabelecidas com as portas da cidade e o próprio rio, por questões comerciais e militares. A reconhecida importância estratégica, quer a

nível militar como comercial leva a monarquia a investir na cidade, recebendo a carta de foral pela mão de D. Afonso III, a 18 de Julho de 1258, passando a assumir o nome de Viana do Castelo até aos dias de hoje. Por essa altura lançaram-se fruto da prosperidade comercial várias iniciativas em prol da estrutura urbana como exemplo a torre da Roqueta, uma torre defensiva contra piratas e invasores galegos e do norte de africa, que mais tarde se expandiu para o forte de Santiago da Barra.



FIGURA 1
MODELAÇÃO TRIDIMENSIONAL DO EDIFÍCIO NÃO CONSTRUÍDO

A prosperidade nas trocas marítimas com o norte da Europa, nomeadamente com a exportação de vinho, frutas e sal, e a importação de tecidos, tapeçarias e mais tarde talheres e vidro, desperta o interesse da rainha D. Maria II, que concede alvará à Associação Comercial de Viana do Castelo em 1852, naquela que é, na atualidade, a 4ª entidade patronal mais antiga do país.



FIGURA 2
TRIBUNAL JUDICIAL DE VIANA DO CASTELO, ANO 2003

Em finais do Séc. XIX com a construção de várias infra estruturas como as ligações de caminhos-de-ferro e a construção da icónica ponte metálica (1877), por Gustavo Eiffel e Théophile Seyrig e um ano mais tarde a estação de Caminhos de Ferro, pelo Eng. Alfredo Soares, no local onde outrora se encontrara o convento de São Teotónio, dos Cónegos Regrantes de Santo Agostinho, fundado em 1631, estabelecem-se as ligações terrestres formais que ligavam a cidade ao resto do país e Espanha. Em 1917, investe-se na criação da Avenida dos Combatentes da Grande Guerra, com o objetivo de criar um eixo de circulação que ligasse a estação de comboios e a frente fluvial. Esta avenida traduz-se num elemento revivalista, com o objetivo de aliviar o fluxo viário e o acesso ao centro da cidade. Com fachadas que se faziam e fazem ainda nos dias de hoje demarcar por edifícios do estilo Arte Nova e Modernismo, albergando vários edifícios institucionais e serviços diversificados. Nessa área desenvolveram-se várias propostas projetuais como é exemplo um edifício com influências no período de transição entre a Arte Nova e o Modernismo, cuja implantação estaria prevista no local onde atualmente existe o Tribunal Judicial de Viana do Castelo, inaugurado a 28 de Junho de 1959.

Originalmente designado como um prédio de rendimento, o imóvel era composto por rés-do-chão, três pisos e uma torre, tendo sido projetado em meados da década de 50 desse século, num período de transição entre o movimento Arte Nova e o movimento Moderno. Composto por fachadas sóbrias de amplas varandas, apresentava à imagem de vários edifício do período do estado novo, uma imagem de imponência, com alguns apontamentos em pedra e demais fachada em tons claros, despida de decoração. No piso térreo verificavam-se áreas com amplos panos de vidro, para a exploração de estabelecimentos comerciais. Em frente pilares que se prolongam até ao último piso, revestidos do solo ao 1º andar em mármore de tom azulado claro, e nos demais pisos em revestimento de cantaria. Aos demais pisos do edifício reservaram-se funções habitacionais, com o apoio de escadas principais e de serviço. As fachadas limpas teriam como decoração apenas

os portões principais e de serviço bem como guardas de varanda em ferro forjado, complementadas com os elementos de vidro que preenchiam os vários alçados. No topo do edifício existe uma torre, a encimar uma das escadarias principais, como elemento enriquecer, decorado a cantaria em fileiras verticais, estabelecendo a relação com as cornijas também em cantarias aplicadas na cobertura. A cobertura assente em estrutura de pinho, aplicam-se telhas tipo Marsella, estabelece um contraste com os tons claros das fachadas, por forma a desenvolver uma imagem à data tida como sóbria e nobre.

Um pouco à imagem do edifício original idealizado para implementar no extremo norte da Avenida dos Combatentes da Grande Guerra, o tribunal judicial de Viana do Castelo assume um projeto despido de elementos decorativos à exceção do elemento escultórico no topo do edifício com referências institucionais e dos motivos orgânicos sobre as portas e janelas, uma liberdade arquitectónica for da sua época.

Com acesso aos desenhos técnicos originais foi possível modelar a volumetria do edifício de uma forma rigorosa, permitindo que se estabeleça uma correlação visual com o edifício actualmente existente nesse local. A implantação do edifício original poderá ser perfeitamente possível, com a instalação de um plugin simples quer no smartphone ou qualquer outro equipamento tecnológico equiparável, utilizando-se um simples código QR ou um marcador próprio para o efeito, Essa ferramenta permitiria por exemplo visualizar o edifício no local original através do ecrã do equipamento e inclusivamente poder observá-lo em realidade aumentada os seus pormenores construtivos nos vários ângulos.

REFERENCIAS

- [1] Reis, Hugo de Amorim “Evolução da estrutura urbana de Viana do Castelo – Factores de transformação e elementos de continuidade”, Universidade Fernando Pessoa Faculdade Ciências e Tecnologias, Porto Outubro 2008
- [2] Fernandes, Mário Gonçalves, “Viana do Castelo: obras públicas e evolução do espaço urbano (1855-1926)”, *Revista da Faculdade de Letras – Geografia I*, Vol VII, 1992, pp. 65 – 162

9.1.2 Projeto Viana 3d: Veiculos De Comunicação Para O Património Cultural

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Abstract — *A city's culture, and even its own identity is linked to their organizational structures, a city that grows by its experiences, documented throughout history. Architectural and urban system's grow from this historical impacts. The preservation of our culture requires documentation of such phenomena as well as the preservation of the architectural and constructive treatment systems which are often associated with a high economic cost. We also often find that a particular architectural record, at least in its structural essence is eventually lost by the inevitability of time or any other factor that validate this outcome. The use of today's technologies bring together an affordable and within reach of all documentary basis. Using the augmented reality application that is developed under the Viana 3D project seeks to establish a cultural bridge between the everyday user, the technician, tourism and our own cultural heritage. An app that display's, in a virtual, but rigorous universe element, accessible for any user who has a smartphone or tablet connected to the Internet. An engine of interactive visualization and analysis of built environments in which real-time interactive multimedia applications are significant.*

Index Terms — Augmented reality; Cultural preservation; Project Viana 3D; Sustainable; Technology vs Research;

O PAPEL DA TÉCNOLOGIA

A tecnologia é um registo profundamente demarcado na sociedade atual. Diariamente vemos um evoluir de tendências, quer a nível da interação interpessoal, como também numa dimensão profissional, em que o recurso aos equipamentos portáteis com sistemas Android ou IOS, desempenham um papel fundamental na estrutura social e do próprio dia-a-dia.

Porém, numa dimensão profissional, verifica-se ainda, nomeadamente nas áreas das artes, arquitetura, engenharias, urbanismo e design, uma certa resistência e mesmo inércia em modificar certos hábitos, em detrimento das novas potencialidades tecnológicas. Com uma reconhecida validade no dia-a-dia, quer profissional e/ou social, a tecnologia oferece novas formas de criar, com recursos e potencialidades apenas limitadas pela nossa imaginação. O recurso cada vez mais frequente em ferramentas digitais e métodos computacionais, tem vindo a convidar os profissionais a agilizar o seu processo criativo, de conceção e mesmo a própria forma de investigar e projetar.

O planeamento urbano, as intervenções e modelações desenvolvidas sobre a cidade, as análises científicas todas essas vertentes poderão encontrar numa base de dados digital, com aplicações diretas na prática turística e profissional, uma grande potencialidade e melhoria na relação com a própria indústria, podem traduzir-se como uma vantagem competitiva global e enriquecedora do setor.

A realidade aumentada, com recurso à modelação tridimensional, assume um papel de destaque, permitindo o desenvolvimento de condições para a melhoria do projeto individual com interesses globais para a cidade. Surgem potencialidades no estudo do enquadramento urbano, na leitura estética e criativa do projeto. O desenvolvimento e implantação de maquetas virtuais possíveis de ser analisadas em todos os ângulos, nos seus vários detalhes e circunstâncias. Por que não reconhecer na realidade aumentada um meio de analisar, catalogar e arquivar o património arquitetónico da sociedade? Criar uma base de dados digital acessível a toda a população, cujas aplicações permita a análise dos edifícios e seus autores para recurso de projetos de intervenção urbanísticos e arquitetónicos.

VIANA 3D – POTENCIALIDADES E OBJETIVOS

O Projeto Viana 3D, tem como objetivo promover uma simbiose entre a tradição e a inovação, potenciar capacidades de inserção de mercado, contribuir para a consciencialização e sensibilização do património material da cidade, contribuindo simultaneamente para o desenvolvimento económico do país.

A proposta entende assumir um papel de complemento aos arquivos administrativos, um veículo de comunicação para o património material local e um importante recurso municipal para os sistemas e políticas de planeamento urbano. Coloca igualmente à disposição o estudo de projetos que nunca foram materializados ou foram já demolidos ou requalificados, como complemento ao estudo de obras de autor, um importante meio de investigação para académicos e entusiastas.

Essa plataforma on-line permite que sejam implementados automatismos nas tarefas de projeção e análise, resultando numa maior racionalização construtiva. Surgem potencialidades na forma de aplicativo para smartphone ou tablet, sendo que os sistemas operativos Android e IOS, permitem eventualmente com recurso à internet a

visualização de uma forma extremamente simples deste serviço, permitindo ao profissional bem como ao visitante, a interpretação estrutural com recurso a desenhos técnicos e mesmo com volumes tridimensionais, colocados na plataforma, tornando-se possível conhecer a obra, o autor e demais obras, no próprio local ou em qualquer local do mundo, que de outra forma não seria possível. A mesma plataforma permite, na palma da mão, a simulação e análise dos edifícios e áreas urbanas, oferecendo o melhor conforto ao mais baixo custo possível.

Coloca-se em estudo a problemática que prevalece com a disponibilização social dos recursos culturais existentes. Pretende-se a criação de um arquivo digital, colocado on-line e à disposição de qualquer cidadão, que permitirá apresentar de uma forma interativa e versátil um registo técnico de sistemas arquitetónicos com valor patrimonial, bem como para além de registos fotográficos e técnicos a criação de um modelo tridimensional, cujas potencialidades interativas permitiram a análise dos edifícios a 360°. De destaque propõe-se a criação de uma plataforma capaz de suportar a implantação do modelo em realidade aumentada em marcador próprio ou mesmo “in situ”, na eventualidade de se

tratar de um sistema histórico cujo desenho se tenha perdido ou alterado. Considere-se as potencialidades criativas e académicas que um sistema deste âmbito coloca ao alcance do utilizador diário, a possibilidade de análise num smartphone em qualquer local do mundo, a possibilidade de se descarregar o modelo, para arquivo, a possibilidade de recorrer a um motor de visualização em realidade aumentada, em que a escala embora controlada possa ser variável para melhor servir as necessidades. Estenda-se então o campo de visão considere-se a possibilidade de analisar uma praça, ou mesmo uma rua ou determinado sistema geográfico com reconhecido valor histórico, tudo através de um sistema móvel e acesso à internet.

Ao se tornar possível o tratamento on-line desses dados e através do próprio download dos modelos, apoiados por ferramentas digitais, coloca-se ao serviço da sociedade recursos inestimáveis, potenciando a produção de um Projeto informado, mais fundamentado e sustentável, apoiando a sua execução de forma eficaz e inovadora. Agilizando-se a maquete ação sem limitações de escalas, com a maior qualidade e eficiência.

9.1.3 Design's Role On The [Re]Habilitation Of Social And Urban Structure

*Micael Miranda*¹, *Manuel Rivas*², *Adriano Ribeiro*³, *Nelson Sampaio*⁴

Acknowledging a state of generalized economic recession, in which the construction and abandonment of architectural systems, as well as culture, are undoubtedly the most damaged sectors, can design present projective solutions, that not only defend the local identity, but also enable the rehabilitation of these structures, assuming itself as an added value for society, urban planning and the local economy?

The basis of design sets on pillars like utility and function, identifiable features of the rehabilitation estate. On that estate the rehabilitation premise allows the sustainable profitableness of the city, demonstrating an important task of the designer's discipline, through the city's strategic capacity as commercial "product". Small towns and historic centers deserve a defensive approach, foreseeing a conscious growth and with strategic plans that should board a global awareness, from the city's point of view as a commercial product. Philip Kotler tells us that "(...) small towns and communities whose streets and buildings have fallen into negligence (...) need a face-lift and invite the designer to propose strategies to embellish the face of the city" (Kotler, 1993). Demolishing historic centers to give place to new constructions, contribute for its progressive non-characterization and, as consequence, for the loss of its identity and depreciation. The room, the atmosphere, all the scenario created around an activity, whether on its recreational or professional dimension, represents the focus for the enhancement of the pleasure of creating, the way the creator human being feels. It can be verified in each element, each set that composes a physical space, appealing or not, the connection and creative and personal stimulus.

The interdisciplinary condition assumes an inclusive and dynamic universe, a liberal structure that enables the creator of exploring his ideas and concepts, like a path increasingly defining itself to incite the growth of something.

The relenting on the construction and its conceptual redefinition, as well as and verifying, that there is an overall reduction of the citizen purchasing power, it's understood to be necessary to adopt proactive behaviors. If any of these topics clearly fall over the domain of engineering and architecture, others are the ones where it's possible to quickly identify the role of Design and even others that understand the collaboration of mixed teams, that transcend the several projective disciplines. Old building's rehabilitation projects to enable a creative net, represent a projective reality with social repercussions, which on their turn enable the local income and, even more, invite to the creation of new sources of personal and enterprising income. This practice can be perceived as an enriching innovation motor of the municipalities while promotional "product".

Latour (2008), states that "designing always is redesigning," that reality allows us to understand the potentialities of our patrimonial and historical heritage, like for example the abandoned architectural structures, which on their turn can promote the development of cultural communities. By enriching the creative, professional and touristic potential of the place by making creative and multidisciplinary spaces, a tool for communication and identity promotion is created, enhancing the production of goods and services. It is intended to forestall a more touristic city, more creative and more professional and inherently, a more sustainable economy. "One of the most promising strategies regarding sustainability is to create the conditions that catalyze these diffuse social resources, by transforming these potentialities in real initiatives capable of producing big systemic opportunities. This is what design for social innovation means (...)" (Manzini, 2011). The road for social and urban systems sustainability, goes through exploring potentialities in design's discipline about social issues, stimulate the cooperative and conjoined progress, search for better urban management and evoke the communication between the several creative branches for creation, a public effort that enriches the city's Branding concept.

Keywords: City's strategic marketing, city's Branding; Design vs planning; Cultural Intervention space; Urban identity; rehabilitation vs construction;

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9.1.4 No Cities: Design And Strategies Of Communication

Interactive innovations as a vehicle for communication and patrimony

Adriano Ribeiro¹, Manuel Rivas², Micael Miranda³, Nelson Sampaio⁴

When referring to the identity of a city we are approaching an extremely broad concept and complex. Of course it is possible to associate a relationship between concept and cultural and artistic heritage of the area, but a city manifests several appearances as a result of its historical growth over time. Historically, the city, tends as she approaches modern days, to recognize reality and human scale as base to project design, development and manifest. In this sense it is necessary to understand the needs of space, depending on the human being who uses it, as a dependency between user and the product. The phenomenon space / time can be interpreted by the relationship that the subject establishes with reality, in the way emotional responses, the architectural element and the urban structure interacts with citizens.

Technology allows, nowadays, to display photo-realistic scenarios that foster a context test. With the modeling and communication in augmented reality, it is possible to analyze and understand some elements that define the identity of a city. Aldo Rossi tells us that "(...) the link between the past and the future is in the very idea of the city that runs as the memory goes through the life of a person and that, to realize itself, must conform to reality but also to conform to it." (Rossi, 2001). Conducting studies of the various components that make up the city structure can even be a study base for future interventions in the urban network or simply a digital historical archive, with tourist and recreational applications. The same principle of experimentation can be applied to a more

global context and might even consider historical contexts that guide architectural systems. Cities, or if the 'no cities' are records of what the urban structure could have been a course that could completely change the vision and the current identity of the city. The material and immaterial culture, represent a fundamental part of the heritage of a certain society, goods and representative values. Growth and existential condition of a space, the way the city has developed throughout his life, is a direct reflection on the relationship between form and human.

When referring to the identity of a city is approached an extremely broad concept, complex and contradictory. Of course you can associate a relationship between the concept and the cultural and artistic heritage of the area, but a city manifests several appearances as a result of its historical change over time. Historically, the city, tends as approaches of modernity, to recognize the reality and human scale as projection base, developing and manifesting. In this sense it is necessary to understand the needs of space, depending on the human being that uses a dependency between the user and the product continues. The phenomenon space / time can be interpreted by the relationship that the subject establishes with reality, in the way emotional responses, the architectural element and the urban structure interact with citizens.

The technology allows, nowadays, play photo-realistic scenarios that foster a context test. With the modeling and communication in augmented reality, you can analyze and understand some elements that define the identity of a city. Aldo Rossi tells us that "(...) the link between the past and the future is in the very idea of the city that runs as the memory goes through the life of a person and that, to realize itself, must conform to reality but also to conform to it." (Rossi, 2001). The formalization of the studies of the various components that make up the metropolis can even be a study base for future interventions in the urban network or simply a digital historical archive, with tourist and recreational applications. The same principle of experimentation can be applied to a more global context and might even consider historical contexts that guide architectural systems. Cities, or if the 'no cities' are records of what the urban structure could have been a course that could completely change the vision and the current identity of the city. The material and immaterial culture, represent a fundamental part of the heritage of a people, goods and representative values. His career and existential condition of a space, the way the city has developed throughout his life, is a direct reflection on the relationship between form and human. The habits and cultures shape as a function of the concept and relationship to technology and communication. These tools allow you to create virtual scenarios, accessible to anyone, resulting in a gain with large tourist and promotional applications as well as an element of support for research and analysis from the viewpoint of design, architecture and urbanism.

On the one hand, the development of studies and analyzes of representative models of projective proposals allows the designer to interpret and supplement data. On the other hand, in economic terms and

establishing a link with tourism, power up the branding factor of the city itself. According to Kotler (1993), the brand, "(...) the image of the place is a key determinant in how citizens and businesses respond to the place (...) represent the image of a place by the sum of beliefs, ideas and impressions that people have (...) "(Kotler, 1993), so it should be considered that tourism in places have a responsibility to enhance the features and show the communities that the fact that the place unique is the that does exist and therefore be attractive.

The tourism, industry, culture and registration or collection of design information of a particular urban system to enrich the knowledge of an existential journey and develop tools for reasoning and implementation of future strategies, enriching of any urban intervention or even as a representation the level of marketing a city, enriching their existential characteristics. This interventional dynamic, allows growth and manipulation in virtual context, an approach switches to reality. Communicate and intervene in this context, is itself an immersive potential, but the possibility of reproducing this information in a more individualized manner and in a single mobile device, represents a potential deep wider and multidisciplinary.

Keywords: No Cities; Design; Communication tools; Heritage, Urban Planning; Augmented Reality VS Virtual Reality VS Mixed Reality

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9.1.5 The Design Of Railway Heritage Built And Not Built And Its Influence In The Design⁹² Of The City Of Viana Do Castelo

Author: Alzira Da Costa Dias

ABSTRACT

Viana do Castelo is a port city in northern Portugal with sea and river access with a rich history involving both. In the late XIX century with the construction of the Eiffel Bridge, the first road and rail bridge of its type in Portugal, over the River Lima the layout of parts of the city had to be altered. The railway line projected would create a new "wall" that surrounded the city⁹³ although this construction in its totality does not exist anymore. The location of the railway station also conditioned the positioning of the main avenue to connect the river and in turn the former dock via road to the station.

Considering the impact that the railway sector had on the city some of the buildings that are important and interesting were built, some only projected but never constructed and others recently torn down due to abandonment. These include the train station, the station master's house and the CP (Comboios Portugal) workers neighborhood. Some of these buildings and the information about them are only available in the form of technical drawings that in most cases are ultimately lost and over looked in archives.

At the Polytechnic Institute of Viana do Castelo - there exists a project, in which I am participating, called Viana3D which aims to put into 3D models, with the use of the program SketchUp, buildings of interest that were projected, built, not built or altered so that people may be able to appreciate the architect's work. These 3D models are then transformed into QR Codes to be read using AR Media Player making them augmented reality.

Augmented reality is the addition of a layer of information to the real world scene using the camera of a mobile device (tablet or smartphone) and showing the "new" image on the scene. With the use of QR Codes in which a projected image (in this case a 3D model) is associated, using AR Media Player and focusing on the code on the mobile device screen the image will appear. This interaction of having to download the program to view the code is relatively easy and adds a different aspect of interaction to just simply viewing an exhibition for example.

This is an alternative and interesting way to show the history of certain parts of a city; in this case the railway sector of Viana do Castelo. Taking advantage of the technological era in which we live, requiring the use of a mobile device to view an exhibition may attract a wider and different public and interest people that normally are not attracted to historical or architectural exhibitions. This method of having the buildings in three dimensional models makes it easier for the public to understand in that not everyone is able to comprehend technical drawings. These QR Codes can be placed not just in exhibition situations but also on postcards or bookmarks

⁹² The word "design" is used in reference to scheme or layout.

⁹³ RAMOS, 2004.

that people can take with them and show others. In some cases the design of a code can awaken curiosity that normal images or lines of text would not be able to do.

Bibliography

FERNANDES, M.(1992).*Viana do Castelo: obras públicas e evolução do espaço urbano (1855-1926)*. Revista da Faculdade de Letras - Geografia I Série, Vol. VIII, Porto, pp.65 - 162

RAMOS, T. (2004) *Viana Polis - Continuidade ou/ e Ruptura*. Porto, FAUP

REIS, H. (2008) *Evolução da estrutura de Viana do Castelo - Factores de transformação e elementos de continuidade*. Universidade Fernando Pessoa Faculdade Ciências e Tecnologias, Porto.

RIVAS et al. - *PROJETO VIANA 3D: VEICULOS DE COMUNICAÇÃO PARA O PATRIMÓNIO CULTURAL*, VII World Congress in Communicatoin and Arts – WCCA 2015 (no prelo)

4

VIANA DO CASTELO | 04 DE FEVEREIRO DE 2016 | A AURORA

“O Portugal que podia ter sido”

Viana 3D “encontra” Leonardo da Vinci

Viana 3D é um projeto do Instituto Politécnico de Viana do Castelo (IPVC) que se propôs catalogar e modelar edifícios históricos, fruto de um trabalho de recolha dos traçados originais e identificação de autores e obras do modernismo português. A investigação



começou em Viana do Castelo e traduziu-se na recolha de centenas de projetos arquitetónicos, alguns demolidos, outros que perduram e muitos que nunca chegaram a ser construídos. A ideia foi cativando a atenção de várias instituições internacionais e, de Istambul, chegou uma ponte da autoria de Leonardo da Vinci.

Manuel Rivas, docente da Escola Superior de Tecnologia e Gestão do IPVC, é o mentor e o principal responsável pela iniciativa que conta já com 54 edifícios modelados. A recolha de informação resultou na identificação da autoria, até então desconhecida, de muitas das construções que eram afinal assinadas pelos arquitetos de referência do modernismo português. Dos edifícios modelados, 11 são projetos que nunca foram construídos e que deram origem à ideia de fazer “O Portugal que podia ter sido”.

A partilha da informação em conferências internacionais, e alguns artigos que resultaram dos trabalhos desenvolvidos, captaram o interesse de outras unidades de investigação e instituições de ensino superior. A possibilidade de conhecer “as cidades que nunca foram” levou à execução e levantamento semelhantes, em contacto com Rivas, com resultados inesperados. É o caso de Genco Berkin, da faculdade Fatih Sultan Mehmet Vakif University, em Istambul, que encontrou um projeto de Leonardo da Vinci perdido na gaveta.

Ainda em Portugal, mais concretamente em Viana, a investigação desvendou edifícios de Rogério de Azevedo, um dos pioneiros do Movimento Moderno Português e o que mais presença tem em Viana, Moura Coutinho e Júlio José de Brito, autor do Teatro Rivoli e Cinema Coliseu (em co-autoria com Cassiano Branco e Mário de Abreu) que em Viana do Castelo assina, entre outros, o edifício da Pastelaria-Café Paris, de 1954.

9.3 Interviews of the ex-collaborators and team leader of Viana3D

Three interviews were done by the author to two former members and the team leader of the project Viana3D. They were one-on-one interviews based on twelve questions that had been established prior with the objective of collecting information from different perspectives within the project.

The questions were:

1. What is the project Viana3D?
2. When did the project Viana3D come into existence?
3. Where did the idea for the project come from?
4. What is/was the objective of Viana3D in the beginning? Has that objective stayed the same or has it changed/evolved?
5. When did you become a part of the project?
6. Was Viana3D only based on the city of Viana do Castelo or has it expanded to other cities? Which cities and what were the projects?
7. What did you do at the Viana3D project?
8. What part of the project/building did you enjoy doing most?
9. Did you (the Viana3D team) try to make the Project known to the people of Viana do Castelo (Have more information public).
10. In the experiences of exhibitions and events that Viana3D was present, what was the reception of the people who had never heard of the Project?
11. Where would you like to see the Viana3D project go?
12. Did the Project help you get to where you are at this moment in your professional life?

The three interviewees were:

Manuel Gulías Rivas is a professor at the Polytechnic Institute of Viana do Castelo⁹⁴ of the design students. Of Spanish origin, he studied architecture and has a master's degree in Planning and Project of Urban Planning from FAUP (Faculty of Architecture of the University of Porto) and for a time worked for the City Council of Viana do Castelo as an architect before becoming a professor at the polytechnic institute. He received his Doctoral Degree in architecture from the Superior School of Architecture of Corunha, basing his study on the "The Ephemeral Pavilions as a field of experimentation: four pavilions three

⁹⁴ The Polytechnic Institute of Viana do Castelo is known as the Instituto Politecnico de Viana do Castelo (IPVC)

architects”. Whilst researching for his doctorate he found the documentation that would later lead to the creation of the project Viana3D.

Adriano Ribeiro was a student of Design de Ambientes⁹⁵ during the years 2009 - 2012 before continuing onto the Master’s Degree in Integrated Design course and working on the Viana3D project modulating buildings and mastering the process behind augmented reality and the QR codes that are the original form of demonstrating the work done. Natural of Braga, he continues to work in the area of technology and design.

Micael Miranda was a student of Design de Ambientes during the years 2009 - 2012 before continuing on to get his Master’s Degree in Integrated Design. He was one of the original members of the Viana3D project and contributed by modulating buildings and collaborating on articles for the duration of his master’s. The theme of his dissertation was (O papel do design na regeneração da estrutura urbana e social- um projecto para a cultura criativa) The role of design in the regeneration of urban and social structure – a project for a creative culture. He works at a company that creates remodelling projects for commercial and residential spaces.

⁹⁵ Design de Ambientes is the undergraduate degree of Urban and Environmental Design that is available at IPVC specifically at ESTG (School of Technology and Management).

9.3.1 Entrevista com: Manuel Rivas Gulías

Data: 29 Março 2016 (30min)

Local: Viana do Castelo

Entrevistador: Alzira Dias

1 – O que é o projecto Viana3D?

What is the project Viana3D?

“Isso é uma pergunta que as vezes não sei muito bem...vou lhe dar uma resposta que não é verdade mas embora é o que me apetece. O projecto Viana3D é uma forma de chatear as instituições municipais para perceber que eles não querem saber nada connosco embora acha que tem muita piada; é isso. Significa que eu ouço sistematicamente a Câmara apresentar um trabalho de não-sei-das-quantas, todos acham que é um projecto espectacular, porreiro, embora contínua três anos depois a ter o mesmo apoio que tinha sempre. Uma palmadinha nas costas - bute para frente...

Agora a resposta oficial, o projecto Viana3D, no fundo, é dar a conhecer da forma realista a autoria dos projectos de Viana do Castelo. Nossos projectos que apresentamos são aqueles que tenham uma assinatura por baixo, quer dizer, nunca apresentamos um projecto que disseram que foi feito por a minha mãe ou o tio. São aquelas que nós temos conhecimento o que passa pelas nossas mãos o projecto original. Por tanto é colmatar aquela lacuna que existia de muitos edificios que existia em Viana que não sabia quem era o autor. Acho que era o inquérito da arquitectura popular portuguesa ou da arquitectura moderna que basicamente era todos os edificios significativos modernos de Portugal tem uma fotografia, um autor, data e uma serie de características. Pronto. Uma altura lembrame de ter tirado informação de todos os edificios que não existiam e eu a escrever por de baixo o que cada um daqueles eram, portanto, no fundo o Viana3D é colmatar essa ignorância da boa arquitectura. E podemos dizer que desde do rio até Santa Luzia no meio da cidade podemos encontrar todos os arquitectos top de Portugal, em todas as décadas, com obras cá em Viana. E uma coisa que acha é que Viana vem expor.

2 – Quando é que nasceu o projecto Viana3D?

When did the project Viana3D come into existence?

“Oficialmente no natal de 2012, e começou em Fevereiro 2013 (no segundo semestre).

Em 2006 quando eu estava no Doutoramento numa disciplina que estava a fazer, encontrei os projectos antigos dos edificios de Viana do Castelo. Eu estava a procura dos edificios da Avenida, na altura que tudo era movimento moderno e encontrei os edificios. Encontrei-os e ficaram lá a espera de fazer alguma coisa com eles.

Nesta altura (2006) nas monografias todas de Viana do Castelo, apareciam os edifícios referenciados, embora, não apareciam a data certa nem autoria. Então ao encontrar os edifícios achei que quando tivesse hipóteses de colmatar essa lacuna que existia em Viana.”

3 – De onde é que surgiu a ideia para o projecto?

Where did the idea for the project come from?

“A ideia de Viana3D surgiu a partir de Google Earth, que eram os edifícios em SketchUp.”

4 – Qual era/é o objectivo de Viana3D no início? Esse objectivo continua a ser a mesmo ou já alterou/evoluiu?

What is/was the objective of Viana3D in the beginning? Has that objective stayed the same or has it changed/evolved?

“O objectivo no início era a dar a conhecer a boa arquitectura de Viana e dar publicidade à IPVC. Continua e ser a mesma, embora, já foram modificando as tecnologias – que não é só modular em 3D, é trabalhar a realidade aumentada e virtual.”

5 – Quando é que começaste a fazer parte do projecto?

When did you become a part of the Project?

“Eu? Antes de começar, antes do projecto.”

6 – Viana3D era só para ser baseado na cidade de Viana do Castelo ou já expandiu para outras cidades? Que cidades e quais eram os projectos?

Was Viana3D only based on the city of Viana do Castelo or has it expanded to other cities? Which cities and what were the projects?

“Como diz o nome era só para Viana do Castelo, ainda estamos nos edifícios dos anos 30/40. Quer dizer, ainda há muita arquitectura para desenvolver, embora, a ideia sempre foi implementar o projecto em outras cidades. Desde um ano e meio atrás, devido a obstáculos, eu estou tentar alargar o projecto para ver se alguém apanhá-la.

Como a ideia era publicitar o IPVC foram modulados todos os edifícios/escolas de IPVC. Que faz com que, nomeadamente, Valença e Melgaço são os únicos edifícios que existem em 3D eram nossos.

Agora estamos com alguma tentativa em Lisboa.”

7 – O que fazias no projecto Viana3D?

What did you do in the Viana3D project?

“Pesquisa nos arquivos/ de informação. Modulação 3D. Publicação nas redes sociais de Facebook e Instagram.”

8 – Qual era a parte do projecto/ edifício que gostavas mais de fazer?

What part of the project/building did you enjoying doing most?

“A parte que gostava mais era ir ao arquivo. E modular.

Sempre há outro, acredita que sempre há edifício, ainda não acabei o mercado; adoro o mercado. Adoro o Pavilhão Dantas, adoro o Gaspar de capitania, O Chalé de Quartim. Mas dos que eu já fiz adoro o mercado e estou a fazer a Caixa Geral de Depósitos: os dois edifícios que já não existiam e achava que tinham uma arquitectura interessante quando eu comecei, eram os que tinha mais vontade de fazer.”

9 – Já tentarem (a equipa de Viana3D) dar a conhecer o Projecto aos vianenses? (Ter informação mais divulgada).

Did you (the Viana3D team) try to make the Project known to the people of Viana do Castelo? (Have more information public)

“Milhões de vezes. Exposições, agora as redes sociais, convidamos a vir aqui (ao gabinete Viana3D). E não só os vianenses, quando vamos ai fora como foi à realço – o Paços de Parede foi através do realço. Nos vendemos isto em todo lado.”

10 – Nas experiências de exposições e eventos onde o Viana3D estava presente, qual era a recepção das pessoas que nunca tinham ouvido falar do Projecto?

In the experiences of exhibitions and events that Viana3D was present, what was the reception of the people who had never heard of the Project?

“Toda malta diz que está espectacular, embora não há dinheiro para nada. Uma ideia muita boa mas continuamos no destaque dois depois de três anos. E não há dinheiro.”

11 – Onde é que gostavas de ver o Projecto Viana3D a chegar?

Where would you like to see the Viana3D project go?

“Boa pergunta. Assim, agora vamos pensar uma coisa, dentro de Viana3D, o Viana3D existe e em muitos sítios. O 3D das cidades existe em muitos sítios, agora qual é a única item que nós temos diferente do resto da malta é a “Cidade que Podia Ter Sido e Não Foi”. Eu gostava que, isso sim se fosse visto e encarado por o resto do mundo. Por o resto do universo, talvez. Agora eu achava que se o nosso grande desafio, o nosso ponte forte do Viana3D não para Viana pode ser reconstruir um edifício que desapareceu ou dar a conhecer as pessoas quem é o arquitecto. Só é que depois quantas pessoas estão

interessadas na arquitectura até ao ponto de saber ou ficar felizes em ir a casa conhecerem que o José Fernandes Martins fez tal edifício. Talvez as tantas vai eu, vai você e as artistas mais perdidas, o resto esta a marimbar. Por tanto não sei, agora o que gostaria é que aquele pormenor, a parte do “Cidade que Podia Ter Sido e Não Foi”, acho que gostava que fosse reconhecida. E tratamos disso a onde for. A Lisboa, que isso dá dinheiro. E o resto não sei.”

12 – O Projecto ajudou-lhe a situar-se onde está neste momento na sua vida profissional?

Did the Project help you get to where you are at this moment in your professional life?

“Não, pelo contrário. Tira-me muitas horas. A sério, não ganho mais dinheiro, nem tenho mais coisas...só a satisfação pessoal. E as vezes não sei se adianta. As vezes penso estou aqui e podia estar a fazer outras coisas, e estou aqui a modular edifícios para quem? Para que a malta toda, “ei que porreiro, não sei das quantas”, e então e o dinheiro, “a é muito caro.” Se fossem como em Espanha que fazia o trabalho e tiram horas de serviço ainda tinha algum.... Não, dá trabalho, e a satisfação que me da, também podia fazer sozinho em casa modulava e envia os projectos e ficava feliz de vida. Eu não faço isto para a malta chegar, “e porreiro” ou quantas sabes de arquitectura. Não, faço porque gosto.”

“Logo no início quais são os pilares nos quais o Viana3D assenta, que são os edifícios de boa arquitectura, edifícios que foram... do início os objectivos, nesta segunda parte evoluiu porque passamos a preocupar não só da arquitectura existente, dos edifícios que deixaram de existir como os edifícios que foram reconstituídas. Nesse sentido evoluímos, para além das novas tecnologias. Agora inicialmente era basicamente por os edifícios no Google Earth. Existia a plataforma de Google Earth para por edifícios, e a ideia era colocar os edifícios lá. Não era mais do que isso. Isto foi evoluindo exponencialmente, neste momento no próximo ano não sei. Quando começamos com isto não pensei que íamos fazer realidade aumentada, não íamos fazer hologramas. Alias o dos hologramas... “Oh Adriano e os hologramas? – E preciso quatro camaras para filmar – não dá... “e agora os hologramas...”

Extra: “Alguma coisa que também é verdade e temos de agradecer, e que tenho de perguntar – qual foi o apoio das instituições. Não podemos falar de Viana 3D sem agradecer o Politécnico, Carlos Rodrigues, e agradecer o Arquivo Municipal e os directores de Arquivo Municipal que facilitarem a pesquisa. Se um dia o Arquivo Municipal decide que nós não podemos entrar lá, o nosso andamento é que vai morrer, quer dizer – nos ainda temos projectos para trás mas agora vai chegar à uma altura que não continuamos a ir ao arquivo

não vamos ter mais fontes para pesquisar. É que eu sei onde estão as coisas embora não tirei toda a informação que lá está – não há árvores na Amazónia para tirar as fotocópias.

“Não é agradecimento, acho que Viana3D quais foram os apoios que tive para a elaboração do projecto? Alias quando faço a passagem de Adriano para vocês, escrevi uma carta onde digo que só seria possível o Viana3D a partir do Carlos Rodrigues acreditar no projecto e a Câmara facilitar de alguma forma a consulta dos projectos. Se a Câmara podia ser mais simpático - claro, que o politécnico podia ser mais simpático – claro que podia, agora acha que os meios que quais trabalha é suficiente? Não.

“Nós temos teoricamente três licenças: o do SketchUp, uma do GoogleEarth para sempre e o do RenderIN que era para sempre. O do SketchUp era para renovação anual embora já não sei há quantos anos já não renovamos.

Também pode dizer que Viana3D que não é só de modular, que há a possibilidade dos alunos vir para ca fazer as teses de mestrado na área do âmbito do Viana3D. Acho importante no sentido que não é só modular edifícios como estar a aproveitar a experiência para fazer teses de mestrado, escrever artigos – há dois anos já fazemos artigos para ir para Brazil, para Barcelona, tentamos estes meios para dar a conhecer o Viana3D. Eu lembro de um de turismo em Algarve (...) acharam o máximo. É como diz o Hugo do OTIC, a TRIM quer fazer um *spin-off* – não sei se o politécnico vai querer. Vai fazer um *spin-off* em modulação 3D ou em casa moduladas?

O Dimitri e o Adriano estão a fazer a realidade virtual, o Adriano está a fazer a realidade aumentada que é a imagem que aparece sobre o que existe. Agora o que eu espero se consigo arranjar o dinheiro fazer a realidade aumentada a partir dos hololens.”

Entrevista com: Manuel Rivas Gulías



9.3.2 Entrevista com: Adriano Ribeiro

Data: 26 Março 2016

Local: Vila Verde

Entrevistador: Alzira Dias

1 – O que é o projecto Viana3D?

What is the project Viana3D?

“É a reabilitação da cidade à mão a usar SketchUp. É o único projecto com modulação 3D à mão em Portugal, que conheço. Existem outros projectos que fazem modulação a usar fotografias.

Existe também um vertente interessante que é “As Não Cidades” que são os edifícios que eram arquivados mas por alguma razão não foram construídos.

Viana3D também tem alguns vertentes turísticas pela aplicação e arquivação dos trabalhos que eram feitos por época, arquitecto, etc.”

2 – Quando é que nasceu o projecto Viana3D?

When did the project Viana3D come into existence?

“Teve início em 2013, no fim do meu curso de Design de Ambientes.”

3 – De onde é que surgiu a ideia para o projecto?

Where did the idea for the project come from?

“A ideia veio do doutoramento do Professor Gúlias (que era em 2006) que era principalmente a criação de um arquivo digital da cidade, neste caso de Viana do Castelo.

O professor teve a ideia e no meu curso existia uns alunos que tinham capacidades de 3D/modulação que podia tornar realidade a ideia dele.”

4 – Qual era/é o objectivo de Viana3D no início? Esse objectivo continua a ser a mesmo ou já alterou/evoluiu?

What is/was the objective of Viana3D in the beginning? Has that objective stayed the same or has it changed/evolved?

“Inicialmente era o levantamento de Viana do Castelo em 3D. O projecto tinha um protocolo/acordo com o Google Earth e o Pipeline, para pôr os modelos 3D no Google Earth, que durante pouco tempo funcionou, pois a Google optou por utilizar modelação por fotografia aérea, o que por sua vertente fez encerrar o Pipeline. Isto fez com que focássemos no estudo da cidade.

Criamos modelos de edifícios para roteiros turísticos: o de José Fernandes Martins, Rogério de Azevedo e depois por épocas.

Também começamos a investigar no âmbito das “Não Cidades” que era a melhor coisa, dado que não existe outro projecto ou cidade que fala do assunto.”

5– Quando é que começaste a fazer parte do projecto?

When did you become a part of the Project?

Desde o início.

6 – Viana3D era só para ser baseado na cidade de Viana do Castelo ou já expandiu para outras cidades? Que cidades e quais eram os projectos?

Was Viana3D only based on the city of Viana do Castelo or has it expanded to other cities? Which cities and what were the projects?

“Era só baseada em Viana do Castelo. Mas tentamos candidatar para o CIM AltoMinho para alargar o projecto para Altominh3D com os polis como Caminha3D etc. – mas não fui aprovado.

Antes mesmo de criar o Viana3D a equipa (os 6 elementos originais que depois passaram para 4) fez os edifícios do IPVC (Melgaço, Valença, etc.) em 3D e foi exposto em formato de um video na Mostra 2^a edição que foi em 2012.”

7– O que fazias no projecto Viana3D?

What did you do in the Viana3D project?

“Começamos com a investigação no arquivo para encontrar edifícios com interesse para ter em 3D. Depois era um processo de passar os desenhos técnicos em formato papel para 2D (CAD) para depois serem transformados em modelos 3D. As vezes era necessário os cadernos de encargos para perceber melhor quais eram os materiais usados ou se não existiam tínhamos de encontrar outros edifícios parecidos ou do mesmo autor para termos melhor ideia da informação que queremos. Também a georeferênciação dos modelos. Existia muito trabalho de campo que era ir ao local do edifício, tirar o levantamento do edifício em fotografias, etc.

A parte da AR Media foi autodidática, em que passei horas e horas a saber como funcionava a Realidade Aumentada. Este vertente do trabalho é principalmente o meu que continua a fazer neste momento para o Viana3D que é possível dado a parceria que o Viana3D tem com o TRIM.

Também escrevi artigos, mas poucos. A criação de orçamentos e candidaturas demoram muito tempo a elaborar.”

8– Qual era a parte do projecto/ edifício que gostavas mais de fazer?

What part of the project/building did you enjoy doing most?

“O que mais gostei foi a Biblioteca Municipal por ser linhas modernas, a cidade não tem muitos edifícios modernos/contemporâneas, e gostei da simplicidade dele. Também, em contraste, gostei da Casa Miguel Regado que é do Jose Fernandes

Martins, localizada em frente do Girassol. Tem uma fachada simétrica com muitos detalhes em que gastei muito tempo a fazer ao pormenor. Ao enviar esse edifício detalhado para o Google Earth rejeitaram o modelo por causa do tamanho dele e da quantidade de pormenores – tive que alterar o modelo para o mais simples possível para ser aceite.”

9 – Já tentarem (a equipa de Viana3D) dar a conhecer o Projecto aos vianenses? (Ter informação mais divulgada).

Did you (the Viana3D team) try to make the Project known to the people of Viana do Castelo? (Have more information public)

“Várias vezes. Uma das primeiras vezes era na Mostra, também com VianaFestas, e o roteiro de José Fernandes Martins que saiu numa notícia. Também através de Youtube em que fizemos vários vídeos promocionais sobre vários trabalhos, bem como o vídeo promocional do Raiooo. E através do Facebook, mas as pessoas colocam “gosto” sem dar muita atenção à informação que está escrita.”

10 – Nas experiências de exposições e eventos onde o Viana3D estava presente, qual era a recepção das pessoas que nunca tinham ouvido falar do Projecto?

In the experiences of exhibitions and events that Viana3D was present, what was the reception of the people who had never heard of the Project?

“As pessoas dizem “boa ideia” mas para financiar é outra história. Existe muita coisa investida num edifício: a investigação, a modulação 3D, aplicação de materiais, o render e o modo de aplicação da informação (se é em Realidade Aumentada, etc.) que demora algum tempo a fazer.”

11– Onde é que gostavas de ver o Projecto Viana3D a chegar?

Where would you like to see the Viana3D project go?

“Portugal3D. Tentamos candidatar para o Horizonte2020 para transformar-lo em Europa3D mas não conseguimos organizar a candidatura à tempo. Mas primeiro gostava de ver secalhar o AltoMinho3D ou Galícia3D para começar.

Neste momento temos a aplicação de Viana 3D em português que vai ser lançado em 2017 (???)”

12– O Projecto ajudou-lhe a situar-se onde está neste momento na sua vida profissional?

Did the Project help you get to where you are at this moment in your professional life?

“Sim, a micro-empresa, TRIM, que criei com um outro ex-elemento de Viana3D não existia. Nós baseamos em design; comunicação 3D, videos promocionais, reabilitação urbana, etc.

Se não fazia parte de Viana3D, a minha tese – que é a aplicação de Viana3D – seria outra coisa secalhar sobre ferramentas 3D em relação com arquitectura...”

Entrevista com: Adriano Ribeiro

Adriano Ribeiro

9.3.3 Entrevista com: Micael Miranda

Data: 30 Março 2016

Local: Viana do Castelo

Entrevistador: Alzira Dias

1– O que é o projecto Viana3D?

What is the project Viana3D?

“O projeto Viana3D surgiu enquanto ideia durante a tese de doutoramento do professor Manuel Gulías. Ele tinha uma visão e (nós) conseguimos materializá-la enquanto acabávamos a licenciatura. Tínhamos algumas valências ao nível de 3D e leitura de projeto nomeadamente urbano, ele entendeu que reunia as condições necessárias para dar vida ao projeto e assim foi. Basicamente é um estudo urbano relacionado com o que conhecemos sobre Viana do Castelo, como poderia ter sido de acordo com as circunstâncias dos projetos que foram pensados e talvez não têm sido materializados ou já sofriam alterações. É um estudo urbano em pormenor da cidade de Viana do Castelo considerando que existem várias dimensões desse estudo.”

2– Quando é que nasceu o projecto Viana3D?

When did the project Viana3D come into existence?

“ (...), nasceu em Setembro de 2013 se não me engano – arrancou no segundo semestre, com o entusiasmo, começamos a trabalhar ainda estávamos a fazer a licenciatura, mas enquanto projeto formal, arrancou quando arrancamos para o mestrado.”

3– De onde é que surgiu a ideia para o projecto?

Where did the idea for the project come from?

“A ideia, foi exatamente como referi, um resultado da tese de Doutoramento do professor Gulías, em pormenor – obviamente tens de falar com ele – mas fomos contagiados pelo seu gosto pela arquitetura modernista, onde a sua tese se incidiu (...) Ao longo dos seus estudos ele viu muito valor patrimonial aqui em Viana, bem como autores que mereciam algum reconhecimento, como os que hoje estudamos – como, por exemplo, o Rogério de Azevedo, o José Fernandes Martins, Francisco Dantas, entre outros.... E a partir daí foi-se amadurecendo o projeto, que começou a ter várias ramificações, começamos a inicio por dar ênfase a esse tipo de obras, fazendo levantamentos das obras que se conhecem em Viana. Depois começamos a reconhecer, muito, novamente por causa da tese de doutoramento do Professor Gulías – que teve muito tempo passado no arquivo municipal, houve muitas obras que se tinham sido pensados e projectadas e remetidas para a apreciação da Camara mas depois não chegaram a ver a luz do dia. E essas obras são também elemento de destaque,

elemento de património, que tenham valor, e nós também por essa via vínhamos a desenvolver projectos a partir dessas ramificações. Ou seja, vai-se amadurecendo esse âmbito.

4 – Qual era/é o objectivo de Viana3D no início? Esse objectivo continua a ser a mesmo ou já alterou/evoluiu?

What is/was the objective of Viana3D in the beginning? Has that objective stayed the same or has it changed/evolved?

“Sim evoluiu, é como te digo é um projecto em crescimento; ou seja, há ideias que são perfeitamente bem definidas: o estudo de modernismo, o estudo urbano da cidade, o estudo da morfologia da rede urbana da cidade, perceber como é que Viana cresceu para a cidade que conhecemos hoje. Mas foi crescendo no sentido em que começamos a abordar temáticas urbanas e materiais, ou seja, o projecto “O Que Podia Ter Sido e Não Foi” é um bocado a materialização dessa ideia – estudar projectos que foram começados mas não realizados ou realizados e actualmente já sofreram actualizações. E começamos também a tentar dar a conhecer esses projectos como forma de demonstrar uma cidade algo diferente do que conhecemos hoje mas com igual valor ou se calhar até nalguns casos com mais valor... já que muitas obras que não se viram realizadas, que poderiam acrescentar valor a cidade e infelizmente que não se realizaram.”

5– Quando é que começaste a fazer parte do projecto?

When did you become a part of the Project?

“Desde o início. Eu, o Adriano, o Nelson e o Nuno juntamente com o Professor Gulías fomos os fundadores do Projecto Viana3D.”

6 – Viana3D era só para ser baseado na cidade de Viana do Castelo ou já expandiu para outras cidades? Que cidades e quais eram os projectos?

Was Viana3D only based on the city of Viana do Castelo or has it expanded to other cities? Which cities and what were the projects?

“Obviamente que o projeto que promovemos é o Viana3D – é a cidade de Viana do Castelo – em todo caso o conceito é aplicável, e era muito do nosso gosto, conseguir que a iniciativa contagie outros espaços urbanos. E é nesse rumo que temos mantido esforços... e vamos continuar a trabalhar para expandir a ideia de Viana3D para o Porto3D ou Braga3D porque estes conceitos certamente os estudos que fazemos aqui tem características semelhantes as outras cidades que merecem valor, merecem destaque, merecem uma referência cultural que por vezes é ignorado. Sim, queríamos crescer.”

7– O que fazias no projecto Viana3D?

What did you do in the Viana3D project?

“O que fazia? Todos tínhamos trabalhos em grande medida equiparáveis, ou seja, o levantamento 3D, a leitura dos elementos do projecto era feita por nós todos. Eu com as minhas valências funcionais voltava-me mais para o estudo de projecto, estudo de elementos, estudo cultural, e trabalhava também em 3D embora certas obras mais complexas eram para o Adriano – é o mestre daqui da equipa do 3D – pro Adriano, para o Nuno e para o Nelson.”

8 – Qual era a parte do projecto/ edifício que gostavas mais de fazer?

What part of the project/building did you enjoy doing most?

“Projecto que fizemos e gostamos? Eu, pessoalmente? Vários, gostei do Edifício Palácio... enquanto projeto, num todo, gostei do levantamento do património do IPVC, (...) fazer o Convento que abriga hoje a Escola Superior de Ciências Empresariais, o polo de Valência foi espetacular. Era um convento extraordinário e infelizmente está em muito mau estado, por isso é que gostei mais de o trabalhar – por um lado é lindíssimo e por outro lado mostra um pouco o descuido que existe em Portugal em relação ao nosso património.

Enquanto em equipa, o projeto do Convento São Francisco do Monte, que embora de arquitectura relativamente simples é um elemento extremamente importante, entendo eu, na cidade, até porque grande parte das pessoas não sabe da sua existência.”

9 – Já tentarem (a equipa de Viana3D) dar a conhecer o Projecto aos vianenses? (Ter informação mais divulgada).

Did you (the Viana3D team) try to make the Project known to the people of Viana do Castelo? (Have more information public)

“Sim. Vamos tentando... embora que sentimos um pouco a falta de um apoio adicional por parte das instituições, mas fazemos o possível para fazer exposições, publicar artigos, participar em conferências como foi aqui o caso da Conferência em que ainda recentemente participamos, aqui no IPVC de Computação Gráfica! Já fizemos exposições em Santa Marta na casa do povo na Associação de Santa Marta, já fizemos aqui na oficina cultural de IPVC, sempre que podemos e a oportunidade se apresenta, tentamos mostrar o nosso trabalho. É certo que os requisitos de que necessitamos para efectivamente demonstrar o nosso projeto, quer informáticas, quer de espaço são algo complicados de atingir e pode ser um bocado restritivo...”

10– Nas experiências de exposições e eventos onde o Viana3D estava presente, qual era a recepção das pessoas que nunca tinham ouvido falar do Projecto?

In the experiences of exhibitions and events that Viana3D was present, what was the reception of the people who had never heard of the Project?

“Nesse aspecto as redes sociais são bastantes simpáticas, dá para demonstrar o nosso trabalho on-line e as pessoas conseguem ver. O feedback é sempre de algum espanto, ou seja, a realidade aumentada é uma coisa algo estranha – não é algo vulgarmente perceptível pelas pessoas, que ficam algo maravilhadas pela sua ilusão/magia. Como não compreendem bem como funciona, ficam deslumbradas...como é que aquilo é possível fazer e nesse aspecto os feedback são sempre muito interessantes.

As pessoas gostam muito, brincam muito, experimentam e por esse motivo acho que conseguimos passar a mensagem. Infelizmente o conceito de divulgação cultural, ou seja, demonstrar trabalho, demonstrar manifestações culturais, manifestações artísticas tem um adesão algo descorada aqui na cidade e na nossa sociedade. É um interesse residual, quando falamos num evento que se vai realizar no sítio A, B ou C, seja Viana3D seja qualquer outra iniciativa, a adesão é diminuta... Em oposição as pessoas que visitam tem na minha percepção, mostrado sempre um grande agrado, uma grande satisfação pelo que vê. Acontece inclusivamente, manifestarem interesse em trabalhar connosco e desenvolver estudos, projetos embora que por algum motivo tenderam a cair no esquecimento, quer dizer manifestam um genuíno interesse, mas passageiro, não é prolongado, não é continuado.”

11– Onde é que gostavas de ver o Projecto Viana3D a chegar?

Where would you like to see the Viana3D project go?

“Gostava de ver chegar pelo menos, no mínimo, ao Mundo3D (risos) mas não era o Mundo3D era quase um Universo3D (risos). Não! Bom realisticamente!...é um projecto que nós queríamos desenvolver aqui na cidade e quando começamos a desenvolver o projecto, não fazíamos bem ideia da história que está no meio das nossas ruas, no meio das nossas casas, no meio dos nossos centros históricos... Reflito às vezes para pensar Viana do Castelo, é tão pequeninha e tem tanta maravilha... tem tanta coisa que não vemos à primeira vista! Se conseguimos encontrá-las e mostrar a sua beleza, de as estudar! Que penso, nas demais cidades aqui mais próximas, cidades históricas como, por exemplo, uma que gosto muito o Porto, que tanto património tem. Penso, como seria à cinquenta anos atrás, como seria, imaginemos nas invasões napoleónicas? o que estaria lá, o que se tinha construído ou não.

Acho isso deslumbrante! Gostava de ver o projeto chegar, pelo menos a um Portugal3D.”

12 – O Projecto ajudou-lhe a situar-se onde está neste momento na sua vida profissional?

Did the Project help you get to where you are at this moment in your professional life?

“Sem dúvida. O projecto Viana3D, primeiro teve um grande mentor – o Professor Gulías – que sempre nos apoiou e sempre nos disse sigam em frente e experimentem e tentem descobrir este mundo e tentem crescer dentro dele e isso foi muito bom para investirmos nesta área, tentar ser independentes enquanto profissionais! Conseguir vingar com as competências que temos vindo a adquirir com o projeto e com o Professor Gulías, como mentor e como coordenador da iniciativa. Com o Viana3D conseguimos desenvolver técnicas, desenvolver processos, desenvolver métodos... Embora em contexto profissional seja uma realidade diferente, estabelece-se a ponte com paradigmas com potencial, como iniciativas que se têm vindo a nutrir com a Santa Casa de Misericórdia. A qual nos permitiu conhecer um pouco mais a realidade comercial e como dialogar o negócio, traçar estratégias e processos para trabalhar...bem como o contacto com as pessoas, que mostram interesse em nós e se mostram disponíveis para investir de futuro no nosso trabalho permitiu nos ver a realidade do negociar estratégias, negociar processos, negociar a realidade profissional e contactar com pessoas que querem ver o seu produto desenvolvido. Mostrou-nos um lado profissional muito importante que hoje pomos em prática na nossa vida profissional.

Sim, fundamental de certeza sem dúvida.”

Entrevista com: Micael Miranda



9.4 The Way of Saint James

O Caminho de Santiago de Compostela – as The Way of Saint James is referred to in portuguese – is the pilgrimage routes taken by people to arrive at the location where the body of Saint James the apostle is enshrined. The pilgrimage was initially done for religious reasons in the past, based on Christianity, now is more frequented by those for spirituality and tourism purposes. There are various routes that can be taken to Santiago, The Portuguese Way (Portugal), The Finisterre Way, The English Way, The Original/Primitive Way, The Via de La Plata (Andalusian Camino) and The French Way are just a few of the closest ones.

Of the Portuguese Way there exists the Coastal Way (Caminho da Costa) that goes from Porto and follows the Atlantic Ocean coastline to cross by ferry from Caminha to Guarda in Galicia, Spain and then continues onwards from Redondela to Santiago. The Central Way starts from Lisbon to Porto and then onto Santiago whilst passing through Ponte de Lima and Valença. The Portuguese Way was the second most frequented route in 2015 after the French Way.

The scallop shell is the symbol representative of the pilgrim which traces its origins back to the first pilgrims who would travel, normally on foot, to the edge of the world – the west of Europe. The lines on the shell also can be interpreted to show the various routes that can be used by the pilgrims to get to Santiago de Compostela. The shell marks the route that should be followed and appears on posts, walls throughout the cities and on the ground along the way.

In 2011 a movie titled “The Way” directed by Emilio Estevez and featuring Martin Sheen was created based on the Spanish coastal route. The story emerges with the death of a man’s son whilst walking the road to Santiago de Compostela and how he takes it upon himself to complete the route with his son’s ashes. The film depicts the pilgrimage in our modern day and shows the connections made along the way.



Fig. 52 – Example of the shell that marks The Way of Saint James.

9.5 Questionnaires about the website

Two questionnaires were created to find out information from the users of the website. The questionnaires were posted on Wednesday 31 October 2018 and the results were obtained within a six day span.

The English version:

Questionnaire

Developed for the dissertation of a student in masters in Integrated Design, “Walk Viana – Viana 3D online” exists to make known to the online public historical information about some buildings that make or made up the city of Viana do Castelo and were developed as part of the Viana3D project.

Your collaboration is appreciated.

1. Had you heard about the project Viana3D before visiting the website?

Yes No

2. If yes, from where do you know the project?

Friends School Exhibitions Online

3. Have you ever visited Viana3D page/profile on social networks/social media?

No Facebook Instagram Google+ Youtube

4. The Viana3D website was easy to access?

Yes No

5. Did you think the website content was interesting?

Yes No

6. The website content was easy to understand in English?

Yes No

7. Suggestions

The Portuguese version:

Questionário

Desenvolvido no âmbito de uma dissertação realizada por uma aluna do mestrado de Design Integrado, o “Walk Viana – Viana 3D online” veio dar a conhecer ao público online informação histórico sobre alguns edifícios que fazem ou faziam parte da cidade de Viana do Castelo e que eram desenvolvidos pelo projecto Viana 3D.

Obrigado pela sua colaboração.

1. Já tinha conhecimento do projecto Viana 3D antes do website?

Sim Não

2. Se sim, de onde conhece o projecto?

Amigos Escola Exposições Online

3. Já alguma vez visitou a página/perfil de Viana3D nas redes sociais/social media?

Não Facebook Instagram Google+ Youtube

4. O website Viana3D foi fácil de aceder?

Sim Não

5. Achou o conteúdo do website interessante?

Sim Não

6. O conteúdo do website foi fácil de entender sendo em inglês?

Sim Não

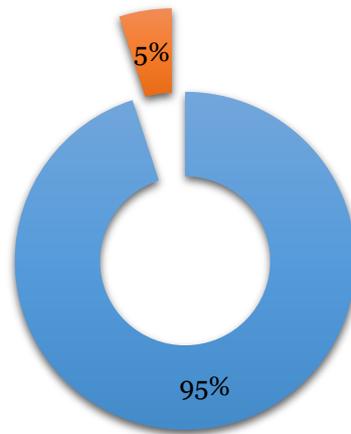
7. Sugestões

The responses to the questionnaires were combined from the English and Portuguese, a total of twenty questionnaires were answered in the span of six days and the results are as follows:

1. Had you heard about the project Viana3D before visiting the website?
Já tinha conhecimento do projecto Viana 3D antes do website?

Question 1

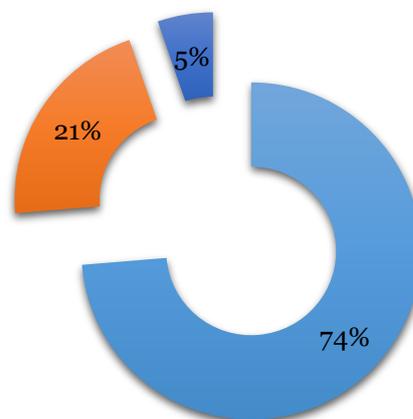
■ yes/sim ■ no/não



2. If yes, from where do you know the project?
Se sim, de onde conhece o projecto?

Question 2

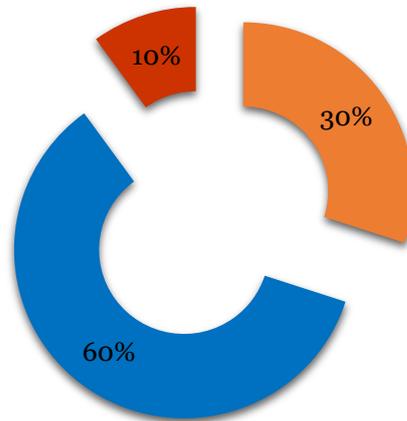
■ friends/amigos ■ school/escola ■ exhibitions/exposições ■ online ■ other



3. Have you ever visited Viana3D page/profile on social networks/social media?
Já alguma vez visitou a página/perfil de Viana3D nas redes sociais/social media?

Question 3

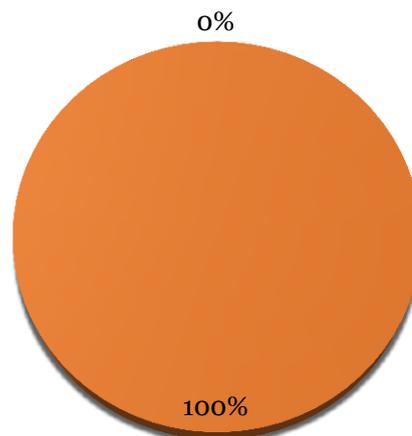
■ No/não ■ Facebook ■ Instagram ■ Google+ ■ Youtube



4. The Viana3D website was easy to access?
O website Viana3D foi fácil de aceder?

Question 4

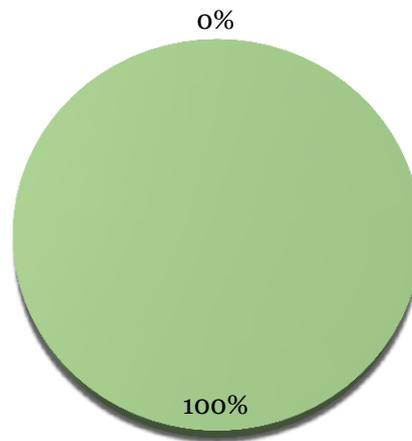
■ Yes/sim ■ No/não



5. Did you think the website content was interesting?
Achou o conteúdo do website interessante?

Question 5

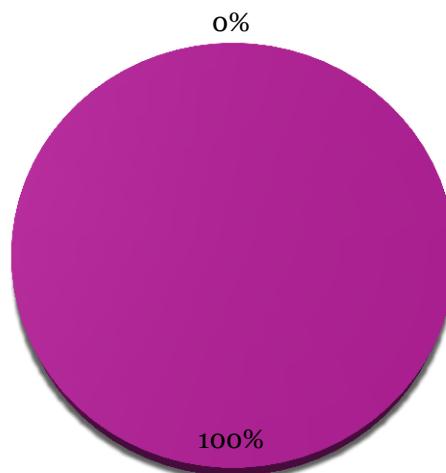
■ Yes/sim ■ No/não



6. The website content was easy to understand in English?
O conteúdo do website foi fácil de entender sendo em inglês?

Question 6

■ Yes/sim ■ No/não



7. Suggestions/sugestões:

- The website has a lot of reading which may put some users off. Make the website more easy on the eye by using more pictures and less words, or hiding some words to appear with graphics.
- A colocação dos modelos 3D no espaço pode ser interessante para se saber realmente onde se situa e como se enquadram. Adotar nomenclatura que seja coerente (nomes de ruas/espacos todas em pt ou todas em en e não ambas), ainda que se contextualize na outra língua.