

PREPARING ARCHITECTS TOWARDS FACING HERITAGE THROUGH ARCHITECTURAL HISTORY AND THEORY. ECTS CREDITS LOAD ACROSS EUROPE

M.T. Pérez-Cano¹, C. López-Bravo², M.M. Molina-Liñán², C. Mosquera-Pérez²,
E. Mosquera-Adell²

¹University of Seville, Department of Urban and Territorial Planning (SPAIN)

²University of Seville, Department of History, Theory and Architectural Composition (SPAIN)

Abstract

The current evolution of the European architecture study plans, since the implementation of the Bologna Process, implies the decrease of hours dedicated to theoretical teaching of certain compulsory subjects, essentials for architects training. It results paradoxical, facing the increasing complexity, regulation and specialisation of professional work in specific fields, such as heritage work.

This article reviews the European architects training concerning the study of History and Theory of Architecture and its professional competences. The analysed study cases, France, Italy, Portugal and Spain, aim to obtain a broad panorama of the methods of training, the qualification and responsibilities of the architects in heritage work.

Keywords: architecture, ECTS, heritage, history, profession, specialisation, training plan.

1 INTRODUCTION

It is well known the concentration of Cultural Heritage spread in the Southwestern Europe countries, mainly in France, Italy, Portugal and Spain.

Thousands of monuments, historic sites and places, among different cultural property typologies, are listed under the cultural preservation regulations of the states and the regional authorities. Taking a look on the UNESCO's World Heritage List, referring exclusively to cultural sites (not natural or mixed sites), the countries with the biggest figures are just Italy with 49, Spain (41) and France (39, where one is a Polynesian site). The next is China with 36. Portugal with 14 sites reaches a relevant number, according to the surface of this country [1].

This panorama reveals a huge social and political commitment. It forces that the above-mentioned situation states the development of appropriate policies of conservation, for what are needed architects by high skillness.

Analyzing the main built heritage (specially the monuments and historic centres), it can be clearly stated that the architectural heritage of these four countries is based on a very rich chronology, with a wide representation of the different ages, from Antiquity to modern times. So, the need of a deep and wide historic knowledge is consequently a preferential tool for the projects and works of restauration.

More specifically, the European Directive 2005/36/EC [2], and its amendment as the Directive 2013/55/EU [3], have established for all the European Union countries the system for the recognition of professional qualifications. It is defined only for a group of professionals, all belonging to health (human and also animal) sector like doctors of medicine, medical specialists, general practitioners, nurses responsible for general care, dental practitioners, specialised dental practitioners, veterinary surgeons, midwives, pharmacists and, significantly, for architects [3].

In the case of the architects, "the holders of recognised qualifications are in a position to understand and translate the needs of (...) conservation and the exploitation of the architectural heritage" [2]. Among the knowledge, skills and competences of the architects, related with the cultural heritage and its character, it is necessary to highlight the "adequate knowledge of the history and theories of architecture and the related arts, technologies and human sciences". We can also add the "knowledge of the fine arts as an influence on the quality of architectural design". These subjects would suppose around a 20% of the total theoretic formative load of the architect [3].

The architects of these above cited countries have apparently been trained under quite similar academic traditions, and now all belong to the European Higher Education Area (EHEA). They get

currently their qualification as professionals after completing Bachelor plus Master degree studies of University High Education on Architecture, that is, the EQF level 6 and EQF level 7 of the European Qualifications Framework.

However, the academic path through the field of the history and theory of architecture changes in these countries. The professional requirements to become an architect able to work in projects and works of conservations and restauration of the cultural heritage are not the same. The recent evolution of study plans for architects' academic qualification has tended towards a generalisation of theoretical knowledge, through the successive Bologna Process Plans. This seems paradoxical, as heritage preservation has experienced new changes, some of them, due to the increase of technological tools.

The study focuses on certain essential subjects in architect training, related to History and Theory of Architecture, necessary for the exercise of the architect's profession in architectural heritage.

2 METHODOLOGY

In this paper, we will carry out a comparative, quantitative and qualitative analysis of the evolution of the presence of History and Theory of Architecture through the ECTS credits load in the successive study plans of different European Architecture Schools. The cases analysed are France, Italy, Portugal and Spain.

Besides, the legislation to the intervention in built heritage is studied through the above countries. The necessity of further experience or specific and compulsory training after architectural studies would be presented. This study intends to obtain at a glance the state of the art at the European level, which will allow us to extrapolate conclusions on a globalised scale.

3 RESULTS

3.1 Case study 1: France

3.1.1 *An outline of the architecture studies in France: previous experiences and present definitions.*

The French case represents a singular one, in contrast with the others. The acquisition of professional competences has been hierarchised in several levels, that would conduct the process of specialisation in the Heritage field for architects.

First, it is necessary to indicate that in France, the Higher Education Institutions concerned with cultural and arts studies -such as Schools and Institutes- depend directly from the Ministry of Culture, being independent and not grouped under any other higher organism -as a University-. Five domains compose the Culture's Higher Education system: Architecture and Landscape; Heritage; Visual Arts; Performing Arts and Cinema, audio-visual and multimedia [4]. Traditionally, since the 18th century, architectural studies were integrated in the Fine Arts Schools all around Europe, France was one of the last countries in detaching Architecture from *Beaux Arts*. It was not until the May 1968 events in France, when the architectural studies were redefined. A new formula that would guarantee the autonomy of Architecture studies was searched, balanced between the existing models [5]. This process would result in 1969 in the foundation of the Architecture Pedagogic Units (UP – *Unité pédagogique*) that would constitute the National Higher Schools of Architecture (*ENSA – École Nationale Supérieure d'Architecture*). Nowadays, they add up to twenty -six of them located in Île-de-France, representing the 40% of the students [4]-. Another two higher education establishments deliver the studies that conduct to the profession of architect.

In order to display the teaching preparation for future architects concerning heritage work, we should start summing up the steps of the architectural studies in France. The adaptation to the European Higher Education Area (EHEA) resulted into a clear division in different degrees, corresponding to the three higher levels of the European Qualification Framework (EQF) [6]. Before the Bologna process, the full qualification for the practice of the profession and construction management had to be acquired after 7 years of study, obtaining the status of Architects (level 7 EQF, DPLG – *Diplômés par le Gouvernement*). From 2007, achieving this has been fragmented in three degrees as follows: Bachelor of 180 ECTS (level 6 EQF, DEEA – *Diplôme d'Études en Architecture*), Master of 120 ECTS (level 7 EQF, DEA – *Diplôme d'État d'Architecte*) and the construction management qualification of 60 ECTS (HMONP – *Habilitation à l'exercice de la maîtrise d'oeuvre en son nom propre*). Over 80% of

students pursue this 360 ECTS education [4], as the lowest degrees limit the practice of the profession. Doctorate studies still correspond to level 8 EQF.

Apart from this academic scheme, post-master programmes -from 60 to 120 ECTS- are being proposed, comprising both specialisation programmes recognised by the Ministry of Culture (DSA – *Diplôme de Spécialisation et Approfondissement*) [7] and by the own Schools of Architecture (DPEA – *Diplômes propres aux écoles d'Architecture*). In addition to this, three different public functions are defined for architects in France, each of them with a specific qualification and professional development. The three categories are the following: teachers at Architecture Schools, architects and urbanists of the State (AUE – *Architecte et urbaniste de l'État*) and architects in charge of historic monuments (ACMH – *Architecte en chef des monuments historiques*).

3.1.2 *The particular case of France in training architects to face heritage work.*

With this wide panorama, we are going to begin with the analysis of the university studies before the HMNOP, focused in the ECTS credits load of subjects related to architectural history, theory or Heritage. This, may represent the basic notions in the field for the overall majority of architects, whether they continue specialising themselves in Heritage or not. As a reference, we will take the case of the ENSA Paris – La Villette (ENSAPLV), as it is the one with most students in France, with over 2000 of them in 2017 [8], and as it belongs to the group of the first independent Architecture Schools created in 1969. Concerning Bachelor studies, were few optional subjects are offered, we can estimate that around a 22,2% of the subjects are related with history (of cities, architecture and construction), theory (architectural and urban), philosophy and related disciplines (social and human sciences) [9]. The DEEA degree allows to work as employees in architectural offices as assistants, with a basic knowledge of the conception process [4]. Going further, Master studies are organised with a common basis (53.3%: with projects -37.5%- and basic subjects -15.8%-), optional subjects (21.7%) and a final semester (25%, composed by an internship -6.7%- and the final project -18.3%-). History and related subjects dispose of a 7.5% of the total credits load, only considering compulsory subjects. The optional ones are conceived around six thematic axes, all of them with a transversal imprint [10]. Although several variations could be presented in the curricula, depending on the students' choice, the axes guarantee a minimum of knowledge in all the areas. The DEA degree permits a wide range of architectural practices, excepting construction management, which requires a complementary preparation, conducting to the HMONP qualification.

However, as we presented, there are four domains of specialisation in Architecture in France, recognised by the Government: risks, urban project, construction management and heritage. DSA programmes constitute a quite specific education, rigorously defined by the Ministry of Culture [7] and being taught in a few centres each. Regarding the Architecture and heritage mention (120 ECTS), it is imparted in three: École de Chaillot, ENSA Paris Belleville and ENSA Grenoble. The preparation for heritage issues is pretty extensive and detailed in all the range of scales: buildings (diagnosis, pathologies), urban centres, landscapes and sites, history, legal aspects, as well as all kinds of urban and architectural interventions (preservation, heritage values, restoration, creation, etc.). These studies are directed to architects who work in restoration and interventions, as well as those who provide urban advisory related to historic and heritage questions, whether they act in the public or private sphere.

Finally, a mention to the public function of architects in France is needed, as it is comprehensive of heritage work. The DSA in Architecture and heritage is a great preparation -not compulsory, but quite pertinent- for two of the public competitions for these positions. AUEs need to have the qualification of DEEA+HMONP (or the previous DPLG), and would choose between two options: architectonic, urban and landscape heritage or urbanism and planning. Their professional position is attached to the administration. ACMH represent the most qualified figure for architects working in the heritage field in France. This is the exclusive qualification that allows architects to accomplish construction management in the interventions and restorations on listed historic monuments, as well as developing consultancy studies on them. ACMHs are characterised for developing the liberal practice of architecture (in their own offices or companies) but with the status of a public function post, as they are in charge of listed historic monuments [11].

3.2 Case study 2: Italy

3.2.1 The presence of History and Theory of Architecture among a wide range of study plans

In the case of Italy, the degree of an architect -since Bologna Process implementation- is organised into a first stage called *Laurea Triennale* (bachelor's degree, 3 academic years, 180 ECTS) plus a second one or *Laurea Magistrale* (master's degree, 2 academic years, 120 ECTS) [12]. According to this, two levels are established which, as we will see below, give access to differentiated professional attributions in each case. This distinction in a three-plus-two years course has been mainly adopted to allow students' mobility from different universities, although there are still Universities -like Ferrara or Reggio Calabria- where the traditional five-year course is kept as a *Laurea Magistrale a ciclo unico*.

In contrast with Spain, in Italy as in other European countries, the bachelor's degree or *Laurea Triennale* training, differs between architect and urban planner academic studies. Within the degrees intended for architectural study -either project or conservation ones- the presence of projects, construction or theoretic subjects varies. This fact determines the future specialisation of the students at their *Laurea Magistrale* courses. However, the degree obtained after the completion of master's degree does not imply different attributions depending on its modality, that is, this specialisation is not professionally recognised.

Selecting from main Italian Universities, those Architecture degrees closely linked to heritage conservation fields, the analysis of their teaching load displays a changeable number of ECTS credits related to the knowledge of History and Theory of Architecture (Table 1). The differences are for both, undergraduate or *Laurea* and graduate or *Laurea Magistrale* degrees. The range of outcomes measured goes from a 36% (*Università degli studi di Ferrara*) to a 17% (*Università IUAV di Venezia*) of the total ECTS load (300 ECTS).

Table 1. Architectural History, Theory and Composition ECTS load in Italy

UNIVERSITY	LAUREA TRIENNALE (3 academic years, 180 ECTS)		LAUREA MAGISTRALE (2 academic years, 120 ECTS)		TOTAL ECTS
	Bachelor's degree	ECTS	Master's degree	ECTS	
POLITECNICO DI MILANO	<i>Progettazione dell'architettura</i>	36	<i>Progettazione architettonica e storia</i>	68	104
ROMA TRE	<i>Scienze dell'architettura</i>	28	<i>Achitettura – restauro</i>	38	66
IUAV DI VENEZIA	<i>Architettura: costruzione, conservazione</i>	26	<i>Architettura per il nuovo e l'antico</i>	26	52
MEDITERRANEA DI REGGIO CALABRIA	<i>Scienze dell'architettura</i>	48	<i>Architettura – restauro</i>	28	76
DEGLI STUDI DI FERRARA	<i>Laurea magistrale a ciclo unico Architettura (5 years, 300 ECTS)</i>				108

Source: prepared by the authors (2018).

3.2.2 The regularization of university degrees: the 'Esame di Stato' and the 'Ordine degli Architetti, Pianificatori, Paesaggisti e Conservatori'.

This greater variety is due to the existence of a mandatory test at the State level, after the studies, which regulates and grants professional competences. In Italy, once the studies -both undergraduate or graduate levels- are completed, the exercise of the architect is regulated by the so-called 'Register of Italian Architects'. The first Italian School of Architecture -'La Sapienza'- was founded in 1920, being this Registry established in 1923, through the law n° 1395, 'Protection of the degree and the professional practice of Engineers and Architects', being regulated by a Royal Decree [13].

As stated in article 4 of the aforementioned Royal Decree of 1925, 'to register in the registry must have passed the state examination for the exercise of the profession of engineer and architect'. This statement implies the need for the so-called 'professional qualification examination' or *'Esame di Stato'* [14], as an indispensable condition for subsequent registration. In it, in addition to the knowledge acquired during the academic courses, the state examination requires specific notions about all the practical aspects of the profession. It consists of several tests, written and oral, and it is necessary to certify the level of quality of the technical preparation of a graduate who is preparing to become a professional. There are four different qualifications exams. The main one called *'Architetto'* includes the other three. These other three modalities have been distinguished in the past few years: *'Pianificatore territoriale'*, *'Paesaggista'* and *'Conservatore dei beni architettonici ed ambientali'*.

The registration in the Register, specifically called, *'Ordine degli Architetti, Pianificatori, Paesaggisti e Conservatori'* is divided into two sections, A and B. Section A is for senior architects, landscape designers and territorial planners, conservators of architectural and environmental heritage, graduated from a master's degree or a five-year course. Section B is for junior architects and planners, graduated from a bachelor's degree.

Concerning heritage work, it will be necessary therefore the inclusion in Section A of that Registry, since public procurement about cultural heritage is thus legislated by the Cultural Heritage and Landscape Code [15] established by both Ministries, Cultural Heritage and Infrastructure. This regulation defines the qualification requirements of the technical directors and executors of the works and verification procedures applying to archaeological excavations, restoration of movable and immovable heritage.

In Italy, Master's degree qualifies architects for the heritage work. Then, it seems reasonable that the greater burden of History and Theory ECTS accumulates during this second stage, in spite of the differences between universities. Nevertheless, the case of the Università IUAV di Venezia is characteristic, where the number of credits led to these studies is lower. Betting –maybe- on the specialization of its students through a wide offer of postgraduate specialization courses. These courses, even if they are not compulsory, help most students to pass the *'Esame di Stato'* for their aforementioned registration in Section A.

In the light of the results, the ministerial responsibility over the heritage work seems pertinent in a country that has the most significant number of assets included in the UNESCO World Heritage List, a country that literally lives on its architectural, artistic and cultural heritage.

3.3 Case study 3: Portugal

3.3.1 The professional regulation in heritage intervention and the architect's training

In Portugal, the intervention in built heritage assets (listed or in process of being listed [16] requires, by legal regime, that the architect possesses a Master's studies degree), as well as 5 years of professional experience after obtaining the academic title.

The architect's current training is determined by the new educational structure introduced by the Bologna Plan, fully implemented in Portugal for the academic year 2009-2010. In this way, the organisation of the Higher Education system was divided into university education -oriented to research- and polytechnic one -of a more professional nature-. Both itineraries respond to a structure of three cycles (Bachelor's Degree, master's Degree and PhD studies). In this situation, several Portuguese universities offer Integrated Masters for Architecture training, which comprise 5-year-studies equivalent to Bachelor plus Master's degree.

In this article, we will highlight the four most relevant Schools of Architecture in the country: Lisbon, Porto, Coimbra and Évora, focusing in the subjects related to History and Heritage (Table 2).

Table 2. Subjects related with History and Heritage in the Integrated Master of Architecture in Portugal

Lisbon		Oporto	Coimbra	Evora
Common Itinerary	21 ECTS	69 ECTS	70 ECTS	30 ECTS
Architecture (speciality)	16.5 ECTS			
Urbanism (speciality)	18.5 ECTS			

Source: prepared by the authors (2018).

The University of Lisbon offers a current itinerary with 21 ECTS, allowing specialisation in Architecture or Urban planning for the 4th and 5th year. Both itineraries enable the future architects working in rehabilitation and remodelling of buildings, buildings, public spaces, urban spaces, landscape and territory [17]. Another of the most outstanding Universities of Architecture in Portugal is the University of Porto, which, like Lisbon, offers integrated Master's studies that enable to obtain a deep level of knowledge in the disciplinary area of architecture and urban planning [18]. Out of a total of 300 ECTS, 69 are dedicated to subjects related to History and Heritage.

The training that the University of Coimbra offers, regarding heritage, is extensive and diverse. Thus, it has a master's degree in Architecture of 300 ECTS, whose purpose is to train the architect from the technical, artistic, theoretical, critical and civic point of view, especially taking into account the areas of Theory, History and City [19].

There are several specialisation masters' programmes in the educational offer, related to architecture, heritage and architectural intervention. As we have seen, the subjects offered by the higher education system related to History and Heritage in Portugal depend on each University.

3.4 Case study 4: Spain

In the beginning of the Bologna Process, the Architecture graduated studies White Paper was drafted in Spain to orientate the elaboration of the new study plans of Architecture [20]. It was admitting that the Spanish Building Ordination Law (LOE) grants attributions to the architects to project and make architectural interventions in any type of listed or protected by its historical value buildings.

This paper states that academic and professional logic, the Spanish tradition (both the remote one and the most recent...) and the European habits advise that the associated competences into this activity must be translated in the implantation of postgraduated studies whose professional nature imposes that it constitutes a master degree with its own general directives [20].

These studies have been developed as a specialization; but they do not have obligatory character for the professional work of the architectural restoration.

Taking as representative precedents, the study plans of the Higher Technical School of Architecture of Seville, the Plan 75, the Plan 98, as the Bologna Plan 2010, and the currently Plan 2012 [21]. This has a load of 24 compulsory ECTS credits belonging to the Department of History, Theory and Architectural Composition, for a total of 360 ECTS (comprising bachelor + master degrees), with a complement of 12 optional ECTS credits, for local targeted subjects such as Landscape, City and Architecture in Andalusia and Architecture of the Americas. Both subjects are developed in continuity to its corresponding formers from Plan 98. However, currently a 58% of this training load is practical, while the previous plan had only a 35% of hours focused on practical work, enhancing theoretical knowledge.

At the most veteran Spanish School of Architecture, at Madrid, the Department of Architectural Composition teaches 33 ECTS compulsory credits among the 300 credits of the EQF level 6 (Bachelor), plus 6 ECTS optional credits and 6 ECTS, in the so called experimental workshops. In the level of Master studies (60 ECTS credits), a load of 20 optional ECTS credits is on charge of the Architectural Composition Department, when 8 ECTS credits are needed to be completed [22].

The situation does not differ too much at the School of Architecture of Barcelona. The Department of Theory and History of the Architecture and Techniques of Communication is responsible for 30 ECTS compulsories credits, and optionally until 13 ECTS credits in the 300 ECTS credits of undergraduated studies. While in the Master of Architecture study courses, among the compulsory 50 ECTS credits for a total of 60 ECTS credits, there exists one transversal subject of 12 ECTS credits where the above department shares its responsibility with two others. The optative load can be completed with two subjects (5 ECTS credits, each one) belonging to the same department [23].

This situation justifies that in Spain, despite not being a mandatory condition, architects dedicated to the study and intervention in heritage often complement their training. The way is follow optional specialisation in postgraduate programmes that provide the necessary tools to develop professionally their work in this field, according to multidisciplinary studies and needs.

4 CONCLUSIONS

This invites us to reflect on the need for an educational homogenization in patrimonial formation since intervention in cultural heritage requires a specific expert profile that guarantees the preservation of its integrity and heritage values.

The responsibility to maintain the historical and cultural integrity of our Heritage must be from a highly qualified staff who can intervene in our cultural Heritage with rigour and sensitivity

The evolution of these curricula study plans progresses towards a learning strategy that is focused on providing a background to the project and architectural design, rather than for acquiring specific tools for each specialisation. In addition to this, a specific specialisation is necessary to work in architectural heritage. Given this situation, we can admit that this training model turns generalised while the profession becomes specialised.

This situation justifies that in Europe, despite not being a mandatory condition, architects dedicated to the study and intervention in heritage often complement their training. The way is to follow optional specialisation in postgraduate programmes that provide the necessary tools to develop their work in this field professionally.

In Europe, the completion of the Architecture university studies, is a necessary condition for become an architectural heritage professional. Through this research, although similarities could have been expected, in the main corpus of teaching, we have found opposite study cases. In Spain, no further training is legally required, a fact that does not happen in other European countries. On the other side, in France, there is a hierarchized system of specialisation related to heritage architects. At last, the four countries analysed represent the Southwestern European panorama, confronted through the similarities and differences in the training of architects, facing towards heritage. A common historic basis and a similar critic thought has produced similar heritage laws. However, as we have seen, the instrumentalization of the education process has conducted to different solutions for qualifying architects –in contradiction with the homogeneous vocations of the Bologna Process-.

This scenario poses the question of the equivalence of the specific degrees from one European country to another. A basic equivalence is guaranteed for general architectural knowledge (at the three last EQF levels; 6, 7 and 8). However, this dispersion in the acknowledgement of the professional qualifications -that may represent a specialisation such as in heritage field- has not being solved through the implementation of the Bologna Process. As a consequence, there is a general consensus in that level 7 is a 'fully-prepared' architect, but the professional attributions gained with this academic degree differ from one country to another. Furthermore, there might be a concern on what is the preparation needed for architects working in heritage (whether they practice an intervention or emit consultancy studies). Pretty qualified professionals –that, in the case of France, may have passed over 360+120 ECTS credits plus a State exam- are not undeniably in the same position to face heritage work as others with a simple degree -300 ECTS credits-. This question opens the path for a debate regarding heritage professionals, that may be overwhelmed and in the seek of alternative training to get this specific knowledge.

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