

# Doctoral Programme as part of an Educational Process Driven to a Contemporary Researcher's Profile in Architecture

## The Experience of Porto School of Architecture

**Luís Soares CARNEIRO**  
**Teresa CALIX**  
**Rui Jorge Garcia RAMOS**  
Universidade do Porto  
Portugal

Porto School of Architecture (FAUP) is known as one of the most prestigious architecture and urban studies schools in Portugal and one of the very few in the world that has as former students and current professors, two Pritzker Prize winners - Álvaro Siza and Eduardo Souto Moura - and a Sir Patrick Abercrombie Prize winner for Town Planning or Territorial Development - Nuno Portas.

This acknowledgment, largely resulting from a teaching tradition that recognizes the importance of practical experience (through drawing and design) in architectural training, faces the challenges of a higher education system each day more demanding, among which one can highlight, particularly, the need to renew and offer doctoral programmes adjusted to the academic and professional contemporary reality. The changes occurring have a significant impact in the way innovation is considered and new architectural knowledge is generated.

## Forms and reforms of Doctoral education The present situation of FAUP's Doctoral Programme in Architecture

### Development and changes over time

Since the formal establishment of FAUP, in 1979, passing from the autonomy of the preceding and centenarian Porto School of Fine Arts into the more regulated University of Porto, many changes of habits and processes of teaching and ways of organization have taken place, although the essential of teaching staff has remained, as well as the best of processes, methods and learning objectives.

Originally, as was happening across all the university, there was no specific doctoral education. The young teachers –nearly the only ones interested in achieving the degree– enrolled, individually, in a doctoral process that was accompanied and supervised by a mentor, that usually resulted in the development of an extensive thesis, whose duration could vary between four and more than a dozen years, with an extension which often exceeded the 1000 pages. This process, although likely to be attended by non-academics, was carried out specifically as a way to a career in teaching and research. So, the PhD degree, unlike what currently succeeds, wasn't considered as the start of a research career but as a moment of consecration of experience and knowledge.

### Bologna's effect

The Bologna Declaration has had an important influence in changing this state of affairs. But several other factors also emerged. In the 1990s, in Portugal, an exponential growth of public and private degrees of architecture generated a large demand for PhDs in order to satisfy ratios formally required by entities that supervised the academic sector. Thus, within the group of the public schools, it generated a great deal of pressure on doctoral training, individually solved through the existing process, i.e., with internal resources, while in the private sector this need was addressed by the use of an existing doctoral scheme both in public universities and abroad. Therefore, within the new Bologna framework innovative doctoral programmes in architecture emerged in many public Portuguese schools, among which was FAUP since 2008. These programmes enlisted students either internally, i.e., younger teachers who, for whatever reason, had not yet completed their PhD, or externally, teachers of private universities that needed to have the doctoral degree, or even the public in general (much of it linked to public entities of different nature) who saw in the PhD an opportunity for personal development and career growth.

### The Main Characteristics of FAUP's PDA

FAUP led the way in the creation of the first third cycle programme in the field of architecture, under the conditions required by Bologna. The existence of internal and external demand, the formation of a doctoral teaching staff already with a certain dimen-

sion and the consciousness that it was the right time to organize a programme of this nature, were the main reasons to implement it.

The Architectural Doctoral Programme (PDA) was organized into three academic years, of which the 1st is a curricular year (consisting of several theoretical courses and a seminar, "Preparation of Thesis") concluded with a public trial before a jury of internal and external members, called "Evaluation Panels". This is followed by two more years of individual work supervised by a mentor. At the end of the 2nd year there is a session where the progress of each research is presented, and although the thesis should be completed and presented at the end of the 3rd year it is common to see the postponement of its conclusion for another year, especially in cases that students maintain their professional occupations or parallel activities. Also during the 2nd and 3rd year students have to carry out "Research Practices" that correspond to their participation in activities of concrete research or presentation of their work through oral communications or published articles. This requirement to report the ongoing work, regulated by a table of credits that values each type of activity, implies not only an overview on the progresses achieved on its own research as well as in its externalization, with its presentation and debate in other environments.

The curricular components of the 1st year are structured in several profiles: originally profiles A, "Projecto do Espaço Habitacional e Formas de Habitar" (Housing and Forms of Dwelling) and B, "Arquitetura: Teoria, Projecto, História" (Architecture: Theory, Design, History), to which have been added later profiles C, "Dinâmicas e Formas Urbanas" (Urban Dynamics and Forms) and D, "Património Arquitectónico" (Architectural Heritage). Each of these profiles has a core set of courses that consists of "Preparation of Thesis" – a course of tutorial nature where students gradually build the original definition and general structure of Thesis – and courses of a methodological, a theoretical, or an informative nature, which broaden the knowledge and the research skills of students. These courses are taught mostly by faculty members from FAUP, which does not prevent to consider – indeed encourages – the collaboration of the best teachers in specific areas even if they come from other schools or universities.

### **How the Doctoral Programme evolved considering the changes occurring in architectural thinking and creation**

Only now, after the completion of the first PhDs through this programme and taking into account the sufficient number of students enrolled in the PDA since 2008 till now (140 students in 2013/2014), one is doing the assessment of six years of activity and is preparing larger-scale changes, a range of internal and external discussions to redesign, where necessary, the existing programme and move forward with internationalization processes are foreseen.

### **How PDA reflects the requests for innovation addressed by the society and by architectural practice**

The tradition of doctoral degrees was, historically, one of an academic nature and of great autonomy and freedom. In that sense, this understanding has been pursued in

some way by ensuring that every student, motivated by concerns of a personal nature, researches the issues in which he is interested. PDA, as many other architectural doctorates, still relies on a very closed system, where the almost complete absence of interest formalized by society, industry or other external entities, added to the non-existent State and programmatic guidance and to the incipient structuring and chronic underfunding of FAUP's R&D Centre (CEAU) research lines, does not promote the convergence of themes and the development of activities complementary and in collaboration. Efforts are underway to change this situation, but the results will only become visible over time.

### **Implemented innovative approaches in the way PDA is structured**

In this context it is worth mentioning the innovative parallelism between the Studies Profiles, in PDA, and the Research Groups, in CEAU. This synchronization has allowed the gradual articulation and transfer of knowledge and experience, both under the supervision of the doctoral process, and in the objectification of research projects. Above all, it has been building research networks around specific topics, organized in research projects, national and international, where some students from PDA have been integrated. Nevertheless, it is consensually recognized that a PhD cannot be considered by itself a research project, though it may be included in it. It also follows from this issue the fundamental debate on the overlap between the interests and objectives of a research project and a doctoral thesis: even though they share affinities, they are not entirely identical, and should therefore keep a reserve of space to be questioned. Between these two scopes of investigation there are formal and organizational differences, as well as diverse academic and scientific principles, circumstances with a strong impact on their contents. The work carried out for the completion of a doctoral thesis in architecture does not have therefore to respond in *stricto sensu* to the ordination of a scientific research project, although the first can, as we believe and mentioned above, be included in the latter. However, this issue is not linear, standing 'between the lines' important aspects to the advancement of knowledge.

Another innovative aspect arises from the collaboration of external professors and a policy of open seminars for students with architects and researchers with a great deal of influence in contemporary thought. This openness of PDA, in coordination with the partnerships developed under the scope of CEAU, has allowed for overcoming the difficulties of setting up research networks, formal and informal, extending the exchange of teachers, researchers and students. It may seem little, but the gathering of professors, researchers and also students from other institutions is an irreplaceable and invigorating experience for deepening the on-going research and for selecting the paths to be followed. The production of knowledge must be seen as part of a process of communication and, subsequently, of transmission and enlargement of that same knowledge.

Along with the standard means of publication and dissemination of the research work, taking advantage of the support from CEAU, PDA has established internal processes to disseminate the work of their students as well as to record the most signifi-

cant works carried out during the programme. Each year C+C+W (Conference, Colloquium and International Workshop) is organized in order to intersect different programmes of FAUP (Masters and PhD) with research. *Resdomus*, an online publication, with independent editorial board and peer-review, works as a privileged repository for PhD students (not just from the PDA) submit articles originated in academic assignments or in researches that are taking the first steps.

### **Collaboration schemes with other schools of architecture on doctoral education**

From the beginning of PDA that collaboration with other Portuguese schools and universities has taken place, and even has been encouraged, either at institutional level or through specific partnerships with high-quality professors. This circumstance promoted a fairly innovative way, concerning the current practice of university teaching, enabling a wide collaboration of external professors coming, for example, from Universidade de Évora, Universidade Técnica de Lisboa, Faculdade de Ciências Sociais e Humanas da Universidade Nova de Lisboa, Universidade Católica, Instituto Superior das Ciências do Trabalho e Empresas, Departamento de Arquitectura da Universidade de Coimbra and from R&D centres as Instituto de Ciências Sociais.

### **Plans and expectations for FAUP's Doctoral Programme in Architecture**

#### **Will it remain the original individual piece of research?**

As mentioned above, although the tradition is that of the individual research, one has been trying to integrate it early with the research lines of CEAU, taking advantage of the strong connection between this R&D centre and PDA. It is considered, however, that some individuality should be maintained, as a strategy for enlargement of interests and probing themes, which can either be operated in standalone mode and then submit public repercussions, or they can be collateral surveys of particular interest.

#### **Will it be shifted into a collection of publications brought together only for final examination?**

It is possible to use this evaluation model and has been tested in several cases. However, it depends on the specificity of each theme and method of approach. It is, in our view, neither a model to suggest nor a model to reject.

#### **How will it be incorporated in the so-called "research by design", "research through design", "artistic research" or "practice-based research" in the existing doctoral education structures?**

This incorporation is already foreseen in recently published legislation. In fact, DL nº 230/2009 has allowed that the artistic and architectural work, produced under certain

conditions, might be the subject of a doctoral thesis. It clarifies and justifies this specificity by stating: "although the meaning and the context of that knowledge might be described by words, its deeper understanding can only be achieved by reference to these works and achievements".

Within the university and the disciplinary thinking this new possibility is relevant, since it assigns a specific understanding to what is meant by architectural knowledge, recognizing its instruments, ways of organization and means of communication. In the case of architecture, especially in academy, design, history and architectural project are thus confirmed as specific ways of knowing in this area of studies; i.e., the field of architecture and its systems of communication is recognized as undeniable material and process to access to knowledge, and in this sense are acknowledged as the basis of reflection leading to a doctoral work. Under the PDA, by 2013, three students concluded their PhD in accordance with this framework.

Within this perspective a new PhD profile is currently being organized, focusing on the practice of architectural design.

### **Has the curriculum of Bologna system and ECTS system shifted the doctoral education closer to teaching courses of the third cycle?**

With the former experience with 1st and 2nd cycle programmes the incorporation of the ECTS logic was fairly simple. Many of the practices at FAUP, in any cycle, approached or even exceeded the recommendations of Bologna that is why the coordination around the notion of learning rather than teaching and concerning the student-centred approach was particularly smooth.

We could also affirm, radicalizing for clarity, that the rearrangement of the model and teaching practices of FAUP –from the courses of Advanced Studies, the Integrated Master in Architecture, to the R&D Centre, particularly shifting to teaching / research and research / communication– was strongly driven with determination to create in 2008, a PhD programme (PDA).

The curricular component of PDA, depending on an academic environment (unlike the previous strong isolation), resulted mainly in a paradigm shift that encourages the creation of a research environment enhanced by all PhD students in their relationship with the structures and the research groups, breaking the researcher previous isolation, ending its excessive reliance on a supervisor, and promoting the development of crossed skills and interdisciplinary competences. As a result, although still in its first steps, it can already be observed in the renewed dynamics of CEAU research groups, in the increased participation in conferences, in publishing articles and organizing scientific events, issues appreciated for capturing funding and personal and institutional academic presentation at different venues.

### **What are the basic rules and criteria for the supervision of a PhD at FAUP?**

The supervision of the doctoral programme is framed by the Scientific Commission of the PDA, which runs the programme and is composed of professors, by the Moni-

toring Commission, consisting of faculty members and students. Besides these two commissions, the overall activity of the programme is hierarchically supervised by the FAUP's Scientific Council. In this organization the Profiles coordinators have particular relevance, once in a daily basis they are responsible to organize, direct and supervise the conduct of the development of the curricular year (1st year) and subsequent years. By their nature they are a central interlocutor ensuring the quality maintenance and its evaluation.

### **What are the basic rules and criteria for the evaluation of PDA?**

The evaluation of PDA is part of the mandatory assessment of Portuguese university programmes, and the accreditation process is carried out by AE3S, an independent agency. Since its establishment, PDA was first reported until the academic year of 2012/2013. However, this evaluation also follows the implementation of rules and clear and transparent criteria for all participants in this process, from the University of Porto, to FAUP, its professors, students and staff. In this framework a system of self-assessment of all actors involved is being enhanced in its different phases: from planning the school year, the admission of new students, the opening of new Studies Profiles, the recruitment of external collaborators, the functioning of courses and their evaluation, up to the delivery of the doctoral thesis and its acceptance, followed by the jury's composition and PhD public examination.

In this long cycle bureaucratic organization is particularly important and the information provided to all participants through the University of Porto's centralized information system (SIGARRA). This system is particularly relevant in respect of the relation course / teacher / student by allowing the provision and control of information on (1) courses detailed programme, (2) on summaries, (3) on evaluations, (4) on educational surveys, (4) on final grades, (5) on the courses activity reports, among many other aspects. As a whole this information is particularly important to monitor and evaluate the performance of the programme, daily or in its training cycle of 3-4 years, allowing the development of measures to improve the processes of teaching and learning.

### **The main characteristics of the researcher's profile that FAUP wants to generate**

#### **The outcomes of doctoral education in terms of the profile of the graduate and the impact of the work generated**

#### **How has architectural practice benefitted from the doctoral education offered by FAUP?**

Since the PDA is a very recent PhD programme and the students who completed it were, until now, too focused on meeting the requirements of their academic career – in fact, so far all those who completed the degree are part of FAUP's teaching staff – it's not possible to verify by now its effects on the architectural practice. However it

seems clear that the methodological tools acquired to question the reality on a theoretical basis will necessarily be valid for evaluating and thus transform the same reality when working on it at a practical level.

### **Are there any practitioners involved in doctoral education at FAUP?**

FAUP has a long tradition of involving practitioners in its graduation programmes. Architectural practice focused on project and drawing courses that depend on a heavy workload is the main subject of FAUP 1st cycle and 2nd cycle programmes. In fact it is a trademark of Porto School. For this reason practitioners have always had an important presence at FAUP and an important role to accomplish. Many of them have also joined the academic career fulfilling the requirements to become professors. Some of them are involved in present doctoral education at FAUP.

However, since the requirements for teaching in Portuguese universities are increasingly demanding, it is expected that the majority of the practitioners without PhD who remain teaching at FAUP feel compelled to complete their PhD in the next few years. Within this perspective, for the expected increase in the number of professors who will find themselves in these circumstances, as mentioned before, a new PhD profile is being organized, which focuses on the practice of architectural design.

### **Which are the main characteristics of the profile of a doctoral student that FAUP wants to create?**

The "research environment" formally enhanced by the PDA and the wider change of structural teaching paradigms in FAUP, without meaning the abandonment of the traditional teaching practice –focused on project and drawing, as mentioned before– allows to achieve the learning objectives at this level of training and the learning results consistent with the criteria listed below. This means that, bearing in mind the student profile of an architect/researcher, the PhD should increasingly enable its holder to a professional performance outside the university. This implies the development of scientific expertise at the academic level, but also transferable skills for professional life<sup>1</sup>. From this perspective FAUP's training offer should be observed as a whole; i.e., from the 2nd cycle, with the Integrated Master, to studies of 3rd cycle, with Advanced Studies Programmes that correspond to advanced technical training (with an academic year and final dissertation) that open the possibility of further studying and researching through equivalences and transfer of credits for the PhD program in architecture (PDA). This formative grading is also the result of integrated adequacy of programmes to the scaling proposed by Bologna.

Under this approach the student profile corresponds to the graded training offer provided by FAUP, i.e., an architect and an architect/researcher. However, it would not be useful to ignore the arguments that training at doctoral level should be understood first and foremost as a process of development of intellectual skills, an aspect that can not be misused by simply adding "professional outputs", sometimes referred to by the tutelary entities which are not involved in doctoral processes<sup>2</sup>.

## Estrutura do PDA - Structure of PDA

		1.º ano 60 ECTS					
		1.º semestre 30 ECTS (frequência obrigatório de 5 unidades curriculares)			2.º semestre 30 ECTS (frequência obrigatório de 5 unidades curriculares)		
perfil A	projecto de tese A1 10 ECTS	teoria A 1 5 ECTS	optativa A1 5 ECTS	projecto de tese A2 10 ECTS	teoria A2 5 ECTS	optativa A3 5 ECTS	[defesa pelo candidato e apreciação por um painel com participação externa de avaliadores do projecto de tese]
		métodos de investigação A 1 5 ECTS	optativa A2 5 ECTS		métodos de investigação A2 ou teoria A3 5 ECTS	optativa A4 5 ECTS	
perfil B	projecto de tese B1 10 ECTS	teoria B1 5 ECTS	optativa B1 5 ECTS	projecto de tese B2 seminário 10 ECTS	teoria B2 5 ECTS	optativa B3 5 ECTS	prova de aferição A+B+C em simultâneo para os três perfis
		métodos de investigação B1 5 ECTS	optativa B2 5 ECTS		métodos de investigação B2 ou teoria B3 5 ECTS	optativa B4 5 ECTS	
perfil C (etc.)	projecto de tese C1 10 ECTS	teoria C1 5 ECTS	optativa C1 5 ECTS	projecto de tese C2 10 ECTS	teoria C2 10 ECTS	optativa C3 5 ECTS	[defesa pelo candidato e apreciação por um painel com participação externa de avaliadores do projecto de tese]
		métodos de investigação C1 5 ECTS	optativa C2 5 ECTS		métodos de investigação C2 ou teoria C3 10 ECTS	optativa C4 5 ECTS	
diploma de curso de doutoramento							

2.º ano 60 ECTS		3.º ano 60 ECTS	
3.º e 4.º semestres		5.º e 6.º semestres	
orientação 50 ECTS + práticas de investigação 10 ECTS	relatório de progresso + debate	orientação 50 ECTS + práticas de investigação 10 ECTS	parecer do orientador Prova pública + Júri
orientação 50 ECTS + práticas de investigação 10 ECTS	relatório de progresso + debate	orientação 50 ECTS + práticas de investigação 10 ECTS	parecer do orientador Prova pública + Júri
orientação 50 ECTS + práticas de investigação 10 ECTS	relatório de progresso + debate	orientação 50 ECTS + práticas de investigação 10 ECTS	parecer do orientador Prova pública + Júri
orientador + inscrição definitiva como aluno de doutoramento			



## Which competences and skills must each student fulfil beyond the specialised knowledge?

To explain the skills and abilities that each student must have it can be assumed that the general criteria set out in Article 28 of DL 74/2006, properly adjusted to a doctoral student profile that FAUP expects to create: (a) ability to systematic understanding in the scientific field of architecture; (b) research skills, abilities and methods associated with that scientific domain; (c) ability to conceive, design, adapt and perform a significant research respecting the requirements imposed by the quality standards and academic integrity; (d) having accomplished a significant number of research work that has contributed to the extension of knowledge in the field of architecture, part of which deserves national or international dissemination; (e) being able to critically analyse, evaluate and synthesise new and complex ideas; (f) being able to communicate with his peers, the academic community and society at large about architecture and his field of research; (g) being able, in a knowledge based society, to promote, in academic or professional context, the technological, social or cultural progress.

### Notes

- 1 “Programas doutorais da U.Porto Notas para uma reflexão”, Formação e Organização Académica da U.Porto – Reitoria, Porto, Julho, 2012
- 2 MOWBRAY, Susan, HALSE, Chritine, “The purpose of the PhD: theorising the skills acquired by students”, *Higher Education Research & Development*, vol. 29, nº 6, 2010, p. 653-664