

# EDUCATIONAL INNOVATION IN ARCHITECTURE & ENGINEERING

*Advances in final projects and thesis*

Carlos Rosa Jiménez & Alberto E. García Moreno [Coords.]

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Advances in final projects and thesis

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## RESEARCH-ACTION ON THE HERITAGE OBJECT.

Methodologies for approximation and teaching experiences at the final degree project course in the School of Architecture of Seville

María Teresa Pérez Cano  
José Manuel Aladro Prieto  
Blanca del Espino Hidalgo  
Daniel Navas-Carrillo



Figure 1. Intervention in the historical site of Granadilla (Cáceres). Author: F. Javier Ostos Prieto (2017)

## 1 INTRODUCTION

The initial objective of the present study is to approach the teaching methodology used in the Final Degree Project course offered at the Degree in Architecture at the University of Seville, which differs from the model adopted in other Spanish universities.

At the Seville School, the model is that of a teaching workshop that includes 120 class periods of mandatory student attendance during the academic year and that requires the participation of all the teaching departments with any involvement in the degree—except Mathematics and Physics. To teachers from those departments, the evaluation tribunal adds the participation of an architect who has been named by the Colegio de Arquitectos, a professional architect association, and provides an external view of the teaching exercise (Univesidad de Sevilla, 2010).

The research group that the authors of this paper belong to has wide experience in research and education in Heritage. For that reason, the present work falls into line with a series of studies that aim to discover the role that exercises of intervention in cultural assets play in the course. Regarding that, the data of the now extinct architecture degree (Pérez Cano *et al.*, 2016) and of the first class that graduated with the new Degree in Architecture (Aladro Prieto *et al.*, 2017) have already been analyzed.

## 2 PROBLEM OR ADVANTAGE: THE PHASE OF PREVIOUS STUDIES

The point of departure is the hypothesis that this kind of project permits a greater development of competences than exercises that require the design of completely new buildings. It should not be forgotten that, in Spain, this last academic exercise enables students to work as architects professionally (ANECA, 2015). For that reason, the fact that final projects have sufficient complexity, which means that students have obtained all the necessary competences, must be stressed.

Heritage intervention projects inexorably demand the previous generation of exhaustive knowledge. Consequently, the students are asked to seek information from different sources, to analyze the information that they have obtained systematically and synthetically, and to interpret and assess it in a well-reasoned way so as to create their own heritage approach to the asset. This process also entails the drawing up the building, the detection of its pathologies and the diagnosis of its state of preservation. All of this requires the appropriate knowledge of conventional construction systems and of specific graphic methodologies for the study of heritage contexts as well.

In short, this is a key previous stage in the development of the project because it allows the students to base their architectural intervention discourse on the detected patrimonial values and on the diagnosis of its state of conservation. Such a methodology is similar to the one that we know today as “case method” (SIEUPM, 2008), which demands the assumption that the interest of the exercise be subject to the methodological process developed by the students in order to help them analyze and evaluate each of the design decisions adopted in a coherent way.

### 3 RESULTS

To confirm this hypothesis, the projects that were presented for the June 2017 session—the first for the second class that graduated with of the newly-created Degree in Architecture (Plan 2010)—have been analyzed. More specifically, there has been a differentiation between projects related with heritage intervention, projects for new buildings in heritage contexts and projects on subjects unrelated to heritage.

The number of heritage intervention designs was greater than the rest in most groups. They amounted to 46% of the total of projects that passed during the session. In addition, there were 35% of projects of new buildings that were located in heritage environments. The variation in the number of male and female students who choose one type of project or the other is not relevant if analyzed separately. However, there is significant difference when projects related with heritage intervention and projects of new buildings in heritage environments are studied jointly, the number of female students being 21% higher.

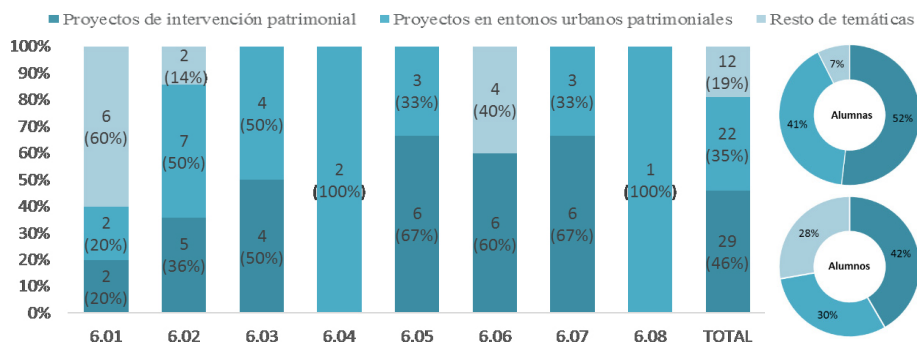


Figure 2. Final degree projects passed in June 2017 session as classified by tribunal, subject and genre

It is worth mentioning that the heritage intervention projects obtained the best marks and that the average mark for male (7,60) and female (7,59) students was similar. In the chart it can be observed that the proportion of projects of this kind that passed with distinction or a grade corresponding to 9 on a scale of 10 was rather superior to the rest (80%-86%) and that percentage changes presented an

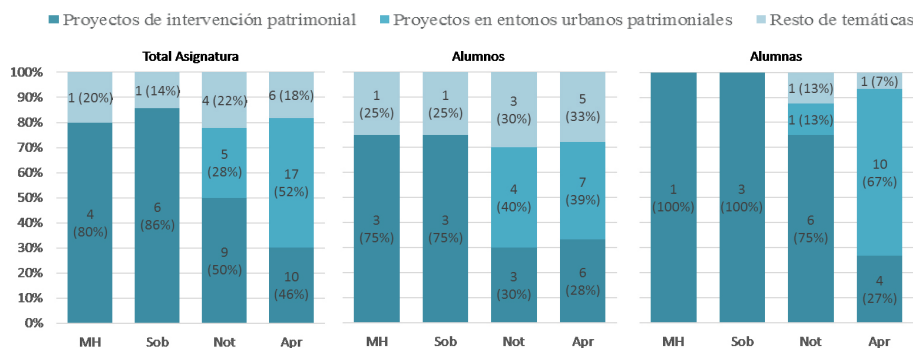


Figure 3. Final degree projects passed in June 2017 session as classified by grade, subject and genre

indirect correlation to the grades. By contrast, new building projects in heritage environments got the worst marks. Most of them received a passing grade (5 or 6 on a scale of 10) although some obtained a 7 or 8 on a scale of 10. In this case, the average mark of female students (5,73) was lower than that of male students (6,32).

Finally, it was of interest to find out if the phase of previous research brought forth an added difficulty and, as a consequence, more time was needed to develop it. However, it was observed that the performance and success rate were slightly higher than those obtained for the total of the sample. It must be said that this study included the data for the June and September 2017 sessions with the focus on groups 1 and 7, the ones taught by the authors of this paper, which meant a greater familiarity with the students.

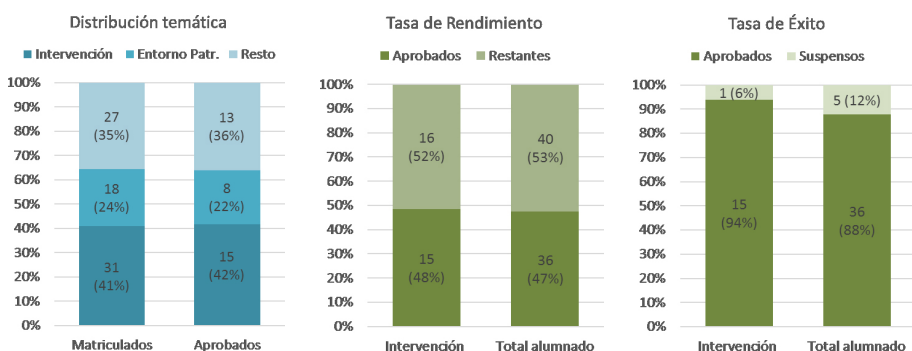


Figure 4. Distribution by subject, performance rate and success rate for tribunals 6.1 and 6.2 in June and September 2017

## 4 CONCLUSIONS

Despite the complexity that the development of these exercises can entail, the intervention in heritage areas is becoming established as a fundamental subject for the Final Degree Project course at Seville's ETSA. Such projects permit a better development of competences, thanks to the carrying out of previous research, as well as a greater balance in the participation of intervening teaching areas. It has been verified, too, that the academic results are more satisfactory.

It must be pointed out that some difficulties have been detected when passing the principles and values obtained through the previous analysis to the project itself. The students frequently overlook a number of the heritage matters that they have addressed, and, therefore, this is the phase at which they need greater input from the teachers. The students also have to confront the uncertainty that can be caused by different assessment and intervention criteria on the part of the teachers, which in itself is a characteristic of the complexity of working with heritage. Nevertheless, it has been proved that such difficulties do not influence the final results.

On the other hand, projects for new buildings in urban heritage contexts are also common among final degree projects. In many cases, however, the high level of

commitment shown in heritage intervention designs seems to be missing here and, on most occasions, these students ignore the heritage dimension demanded by the setting of the intervention. In general, a lower development of competences and worse academic results are the norm in this case.

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Education is at the center of humanity's fundamental rights, it transforms our lives and it is the culmination of one of the basic aspects of our full exercise as such, contributing to the consolidation of peace, the eradication of poverty and the encouragement of sustainable development. As a fundamental right accessible to all, education must go hand in hand with quality and innovation. The role educators play is crucial in the way they generate innovative experiences that turn learning into a creative, dynamic, enriching and motivating process, producing tools which make possible a responsible and mature education that is committed to society.

In the branch of Architecture and Engineering innovation in higher education acquires even more relevance, since it has a significant impact on the improvement of the autonomy and motivation of students in a collaborative and knowledge transferring working environment.

This publication gathers methodologies, projects and experiences carried out in Architecture and Engineering Schools, showing the optimum results of innovative practices in learning practices. This material aspires to contribute both to the training of students and docents, while it also aims to generate debate and reflection regarding academic and professional practice and therefore introduce the necessary changes to guarantee a comprehensive and innovative education in accordance to the needs of the individual and our advanced society.

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