

chaptertwo

Theory



Introduction

Marco Frascari, Associate Director of the PhD programme in Architecture at the University of Pennsylvania, states that the arduous relationship between architectural theory and practice has been with us since the earliest times of philosophy (1988: 15). The education of architects is often criticised by members of the industry (Noero, 2009: 102); this complicates the transition from education to practice as the aims of the universities and the needs of industry do not often coincide. In this chapter, architectural education and the relationship between architectural education and practice are discussed in an attempt to identify what the possibilities are in dealing with the transition between the two phases in an architect's career.

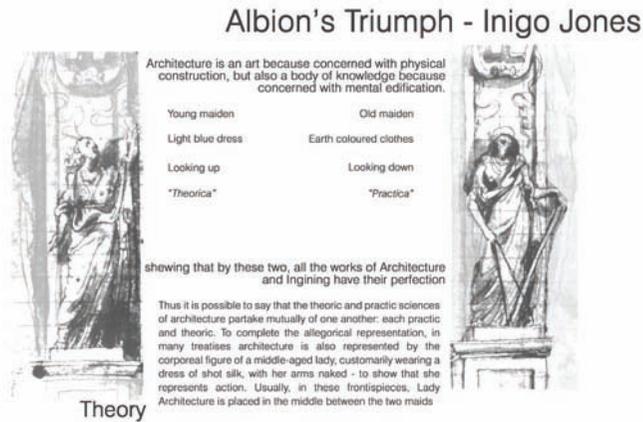


Figure 2.1 Details from Albion's Triumph by Inigo Jones depicting the maiden's Theory and Practice

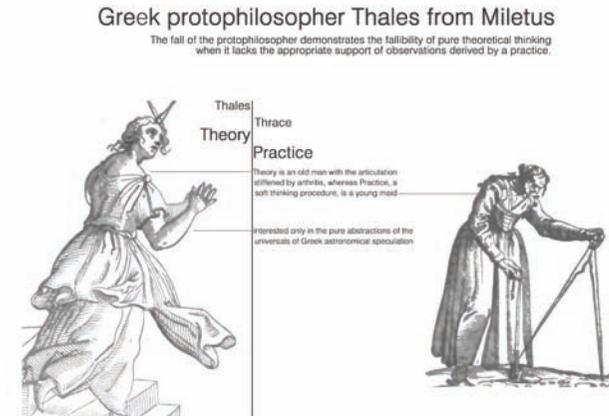


Figure 2.2 The origin of the relationship between theory and practice in Greek mythology

Historic relationship between architectural theory and practice

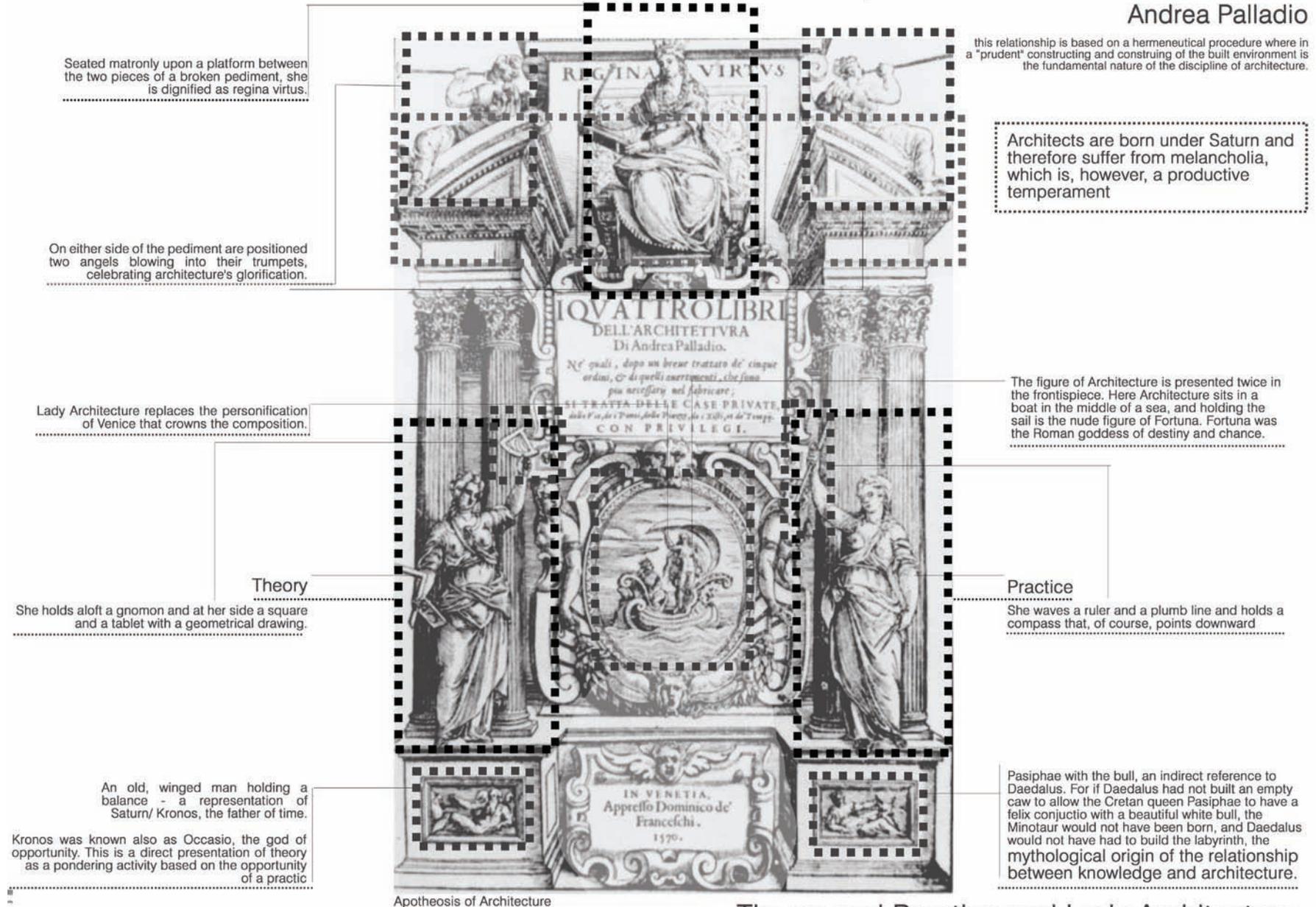
Depicted in Figure 2.1 - Figure 2.3 is a summary of Frascari's paper on the relationship between architectural theory and practice: "Maidans 'Theory' and 'Practice' at the sides of Lady Architecture" (1988). The paper explores the origins of the relationship within the Greek mythology and then demonstrates how influential architects

such as Inigo Jones and Andrea Palladio depicted this relationship on building façade designs.

Theory and practice are viewed as the two entities, both equally important, that act as the supporting "infrastructure" that sustains architecture. Each has its own individual character and

responsibilities and can only function fully if the other is in full function – and only if both are fully functional can architecture sustain itself. Theory and practice are in equilibrium, the two sides are interdependent and the one requires the other in order to exist.

Frontispieces of Quattro libri dell'architettura - Andrea Palladio



Theory and Practice and Lady Architecture

Figure 2.3 Frontispieces of Quattro libri dell'architettura by Andreas Palladio - summary of the meaning of the facade detail

A brief history of architectural education

The Sophists were the first to introduce the concept of Liberal Arts in the 5th century BC (Graceworks, 2003). The intent of the Liberal Arts was to be a standard prelude of general studies to act as a platform for students before specialising in a profession, according to Rowland and Howe, in the foreword of the 2001 publication of Vitruvius' Ten books of architecture (7). The Liberal Arts (Fig 2.4) lost its status by the first and second century AD as the parents were not concerned about the substance of the education obtained by their child, but rather the "rapid professional enhancement" (ibid: 8) of the student.

Throughout Medieval times and well into the 19th century architecture was taught in two ways, namely: an apprenticeship type education where the student traded his labour services for instruction and education from the master builder; and articulated pupils,

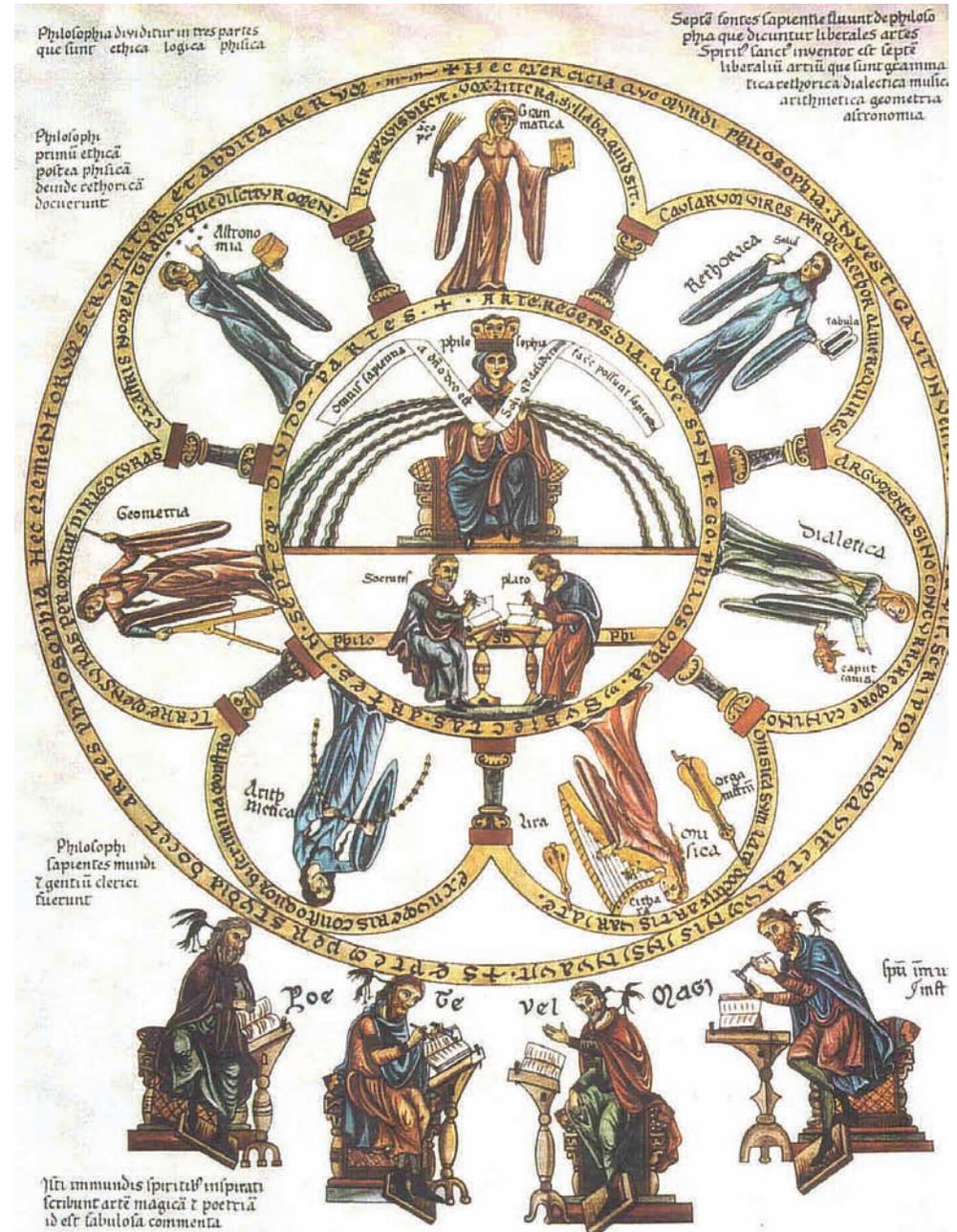
who paid to get taught. These training methods lasted between five and six years and attendance at a local Arts School as well as travelling was encouraged (Stevens, 2010). The first school of architecture was opened in France in the early 19th century and was called *École des Beaux Arts* (ibid).

John Dewey (1859-1952), an early 20th century philosopher on pragmatism, made a large contribution to educational systems as we know them today. He was the first to introduce hands-on-learning and experimental education (Neill, 2005). Dewey was the first to state that education should not consist of a single educator standing in front of a class teaching the content of a pre-described syllabus, but rather an interactive conversation on the subject matter. Dewey argues that education is a social process and therefore social reform can take place within a school.

Archi-Mundus is a collaborative project between 17 European and 12 American Schools of Architecture (Spiridonidis; 2011). Their main aim is to establish an international forum for further development and the implementation of competence-based architectural quality - according to this project the most appropriate learning environment. The focus of this project is to educate students in an appropriate manner to successfully prepare them for the increasing demand for mobility, transparency, communication and quality.

The Bauhaus' approach to design education as a hands-on skill development process is another approach to enhancing the quality of architectural education. The educational methodologies and approaches of the Bauhaus are analysed in depth in Appendix A.

Jo Noero stated that architectural education is in a predicament today in that architecture is still being taught according to the old Beaux Arts model (2009: 104), which took students off site and instigated the education of architecture on an academic basis. This led to the isolation of the profession and a loss of integration between theory and practice. Due to the structure of academic institutions and technological development, architecture has become a highly specialised, isolated profession. As depicted in Figure 2.5, a large gap has developed between architectural theory and practice. Jo Noero believes that the future of architecture lies in the collaboration of architecture with the other professions in the built environment and that the inter-dependency between theory and practice is therefore in desperate need of restoration

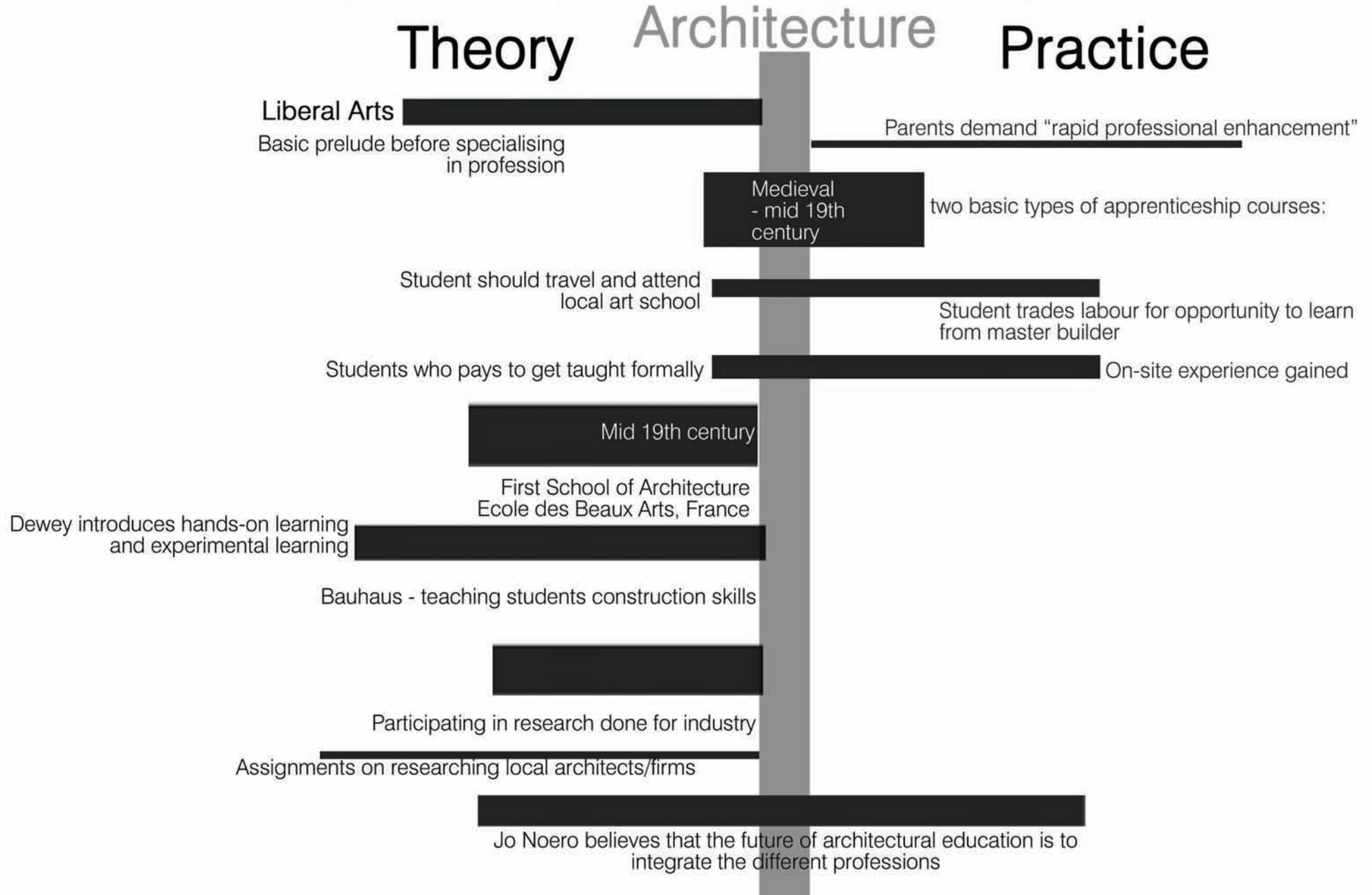


“The value of an education in a liberal arts college is not the learning of many facts but the training of the mind to think something that cannot be learned from textbooks.”

Albert Einstein (1879-1955)

Figure 2.4 The seven Liberal Arts: Grammar, Logic, Rhetoric, Arithmetic, Geometry, Music and Astrology -derived from classical thought

Relationship between theory and practice throughout the history of architectural education



Debating architectural education

Identification of shortcomings (The problems)

Theory and practice are both equally responsible for inducing a sustainable relationship which will lead to a healthier architectural condition. Only after understanding the historic relationship between theory and practice and in what way architecture is reliant on the stability of this relationship, can conclusions be drawn as to how to improve this relationship.

The three main issues that continuously occur when the relationship between architectural theory and practice is debated in intellectual circles, in no specific order, are:

- Universities do not produce students that are prepared for practice (Hawley, 2004:8);
- Research performed at universities does not coincide with relevant issues experienced by the industry (Westfall, 2010: 165);
- The industry does not effectively influence the educational syllabus (Stevens: 2010).

These issues are caused by many factors and many repercussions spiral from these fundamental shortcomings, resulting in architects losing their status and value within the public realm. This dissertation aims to identify the reasons for the shortcomings as well as possible solutions in order to restore the relationship between architectural theory and practice.

The University (Theory)

Dalibor Vesely of the University of Cambridge's School of Architecture states: "The first thing that usually comes to mind when hearing about architectural education is its ambiguous nature and uncertain place on the current architectural scene..." (2004: 63).

Christine Hawley of the Bartlett School of Architecture states that the criticism schools in architecture receive from members of the industry is that students are not necessarily prepared for practice once they leave the university. The conflict of interest lies between the university's aims of producing academic scholars and the industry's requirement of receiving competent, useful architects that can produce architecture (2004: 8). She continues by stating that newly trained architects are often exploited and used for their skills and not necessarily encouraged to expand their knowledge base. She

suggests that this is a managerial problem within the profession (Ibid: 11).

Due to the lack of experience students often accept inappropriate employment opportunities out of desperation. The result is often that the architecture produced by the student in the industry and the architecture the student did at university are very different. The student's design abilities are not stimulated and developed, but rather suppressed into creating the same architecture the respective firms have been producing for many years. The university is often criticised for not preparing students for the industry, but often the student is not granted the opportunity to demonstrate and communicate the skills obtained at university. Students' design abilities are often not managed effectively when they start working, and once the students are qualified to design their own buildings, their ideas are either old or the students have lost interest

in doing ground breaking work and just continue to produce mediocre architecture.

"Graduates are an asset to the profession precisely because they can detour away from traditional assumptions of the profession", says Mark Wigley, Dean of the Graduate School of Architecture, Planning and Preservation, Columbia University (2004: 16-17). Students that have recently left the university should therefore be seen as an asset that can add value to a firm. He continues and states that academicism of architecture is one of the most crucial parts of the profession as it acts as the platform for innovation and dreaming in architecture. He calls it: "...a space for exploration and redefinition" (Ibid: 16).

Tom Henegan, a lecturer at the AA from mid-1960s to mid-1980's is of the opinion that it is not the responsibility of the university to create a good

architect. He believes that a university can only put the student in the position of becoming an architect, there is no responsibility involved. Henegan argues his point by saying that many students focus on being employable, whereas others are not really interested in the quality of work that they produce on university level, as they know that it will not influence their ability or chances of getting a job (Ibid: 36). This is a problematic characteristic of the entire architectural profession. As a possible solution to this problem, Leon van Schaik (Henegan, 2004: 37) argues that students should work and study simultaneously – where one will have the opportunity to apply theory as it is taught and not try to apply all of it at once after one has finally left university. This solution can be linked to Christine Hawley's comment that: "... practitioners need to be involved far more in architectural education," (Hawley, 2004: 9).

The role of research (The relationship)

“Making research relevant to the design disciplines is of crucial importance to those involved in architectural education, as one of our fundamental roles is to generate and sustain a search for new knowledge that will improve the built environment for the people of various cultures and societies, as well as enriching the role of the architect and the state of the profession” (Westfall, 2010: 165).

Marvin Malencha believes that “the connection between research and practice is a matter of culture” (Ibid: 152). The mutual dependency between the two is currently fuelled by globalisation, economic crisis,

technological change and changing social values. The way architecture is taught should change as social values change because these are contingent.

Benjamin Schwarz, in his paper “The place of architectural research”, argues that research topics should be closely aligned with the agenda of the profession and the practitioners in order for the knowledge to be effective (2010: 159). Communicating this new knowledge and research to practitioners is of utmost importance, otherwise it becomes irrelevant to the profession. The link between academia and the profession should therefore be apparent and powerful.

The new knowledge should then in turn be communicated to the public by the practitioners.

There are two types of research: scientific research and applied research. Scientific research has strict boundaries, is done through experimentation and all knowledge consists of facts. Applied research is more a technique or method, where knowledge is obtained through experience, reflection and observation. Ultimately both types of research provide new knowledge. “Accordingly we can infer that a mutual dependency exists between the role of academia (education and research) and practice

(applied knowledge) for our discipline to address the problems we face today” (Boza: 159).

In a personal interview Randall Bird, Head of the Department of Architecture at the University of the Witwatersrand, criticised schools of architecture in South Africa because of their inability to make research available to the industry and the public. The communication between educational facilities and the profession has no formal or informal platform that successfully informs the one entity of the development and growth of the other.

The Industry (Practice)

Stevens states that the university grants qualifications with the idea that the industry will regulate the quality of the syllabus. He summarises architectural education by stating that architecture only exists through the reproduction of itself and this is formally located within a university structure. The other major contributing factor is that the academics produce research that informs their teaching and in this way the profession can grow (Stevens: 2010). The industry should therefore pressure the university to produce a better suited candidate that can meet all the requirements of being a professional, yet still be able to add value to the industry through research and further studies.

Architectural education is primarily based on information obtained from intellectual theory and literature. The

authors of such text are often not qualified architects (Ibid) and if they are, they spend most of their time writing about architecture and not doing architecture. Therefore the industry seldom has any input into how students are educated.

The effect on architecture (Architecture)

The aim of architecture has shifted from its role as creator of socially cohesive spaces, which serves a larger population of the public, to an architecture preoccupied with the needs of the developer in terms of aesthetics and finances as well as technological delimitations for a single building (Wigley, 2004: 13 & 15). The architect is not acting as the creator of public spaces and is therefore experienced by the public as a negligible participant in the social realm. The architectural profession is not succeeding in its communication of better concepts to the public, because the developer has the final say (Schneekloth & Shibley, 2006: 131).

Wigley acknowledges the fact that architecture cannot dictate all social and political issues (Wigley, 2004:

14), but that architects should still attempt to create new and innovative spaces that create environments with the potential to lead the user to question the possibilities in architecture and space. He views buildings as publications that reflect one's perception of architecture and other buildings, thus communicating a state of mind. His conclusion is that those who design buildings or objects that cannot yet be built, are the main generators behind architectural evolution or development (Ibid: 14-16). It is therefore evident that the student, the education of architectural design and the communication of these new concepts and ideas are essential for the development of architecture.

Figure 2.6 is a summary of the different arguments in the debate.

Debating the relationship between architectural theory and practice currently

Theory Architecture Practice

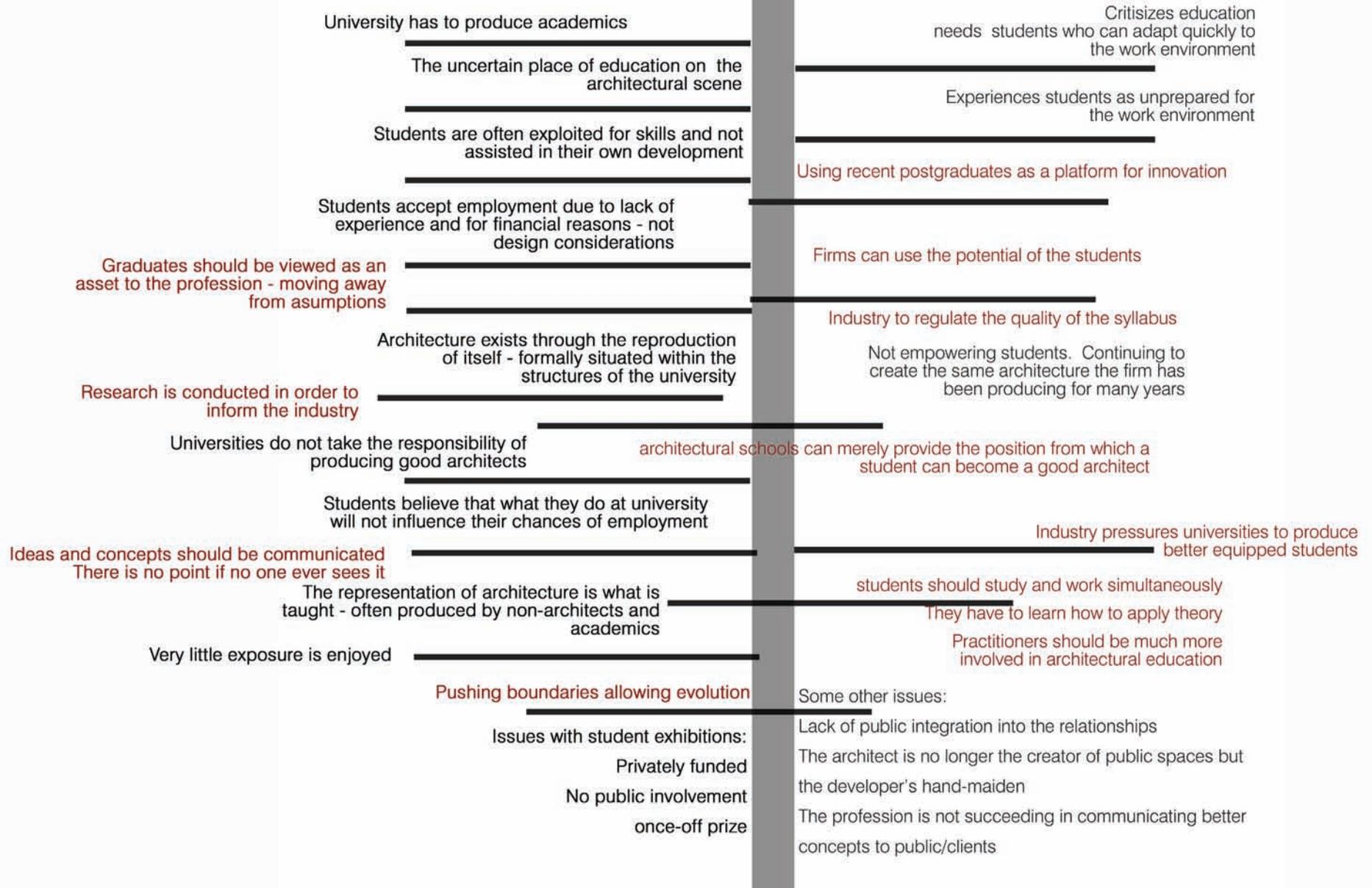


Figure 2.6 Summary of the current debate between architectural theory and practice

Restoring the relationship (Possible Solutions)

Moving away from “expert culture”

Schneekloth and Shibley, in “Emplacing architecture into the practice of place making” (2006: 130) argue that architecture needs to move away from its image as an “expert culture” and place itself more firmly within the everyday environments of the users; moving away from the exclusivity of architecture, but not taking away any of the value of the expert knowledge or status. “The expert appropriation of place making denies the potential for people to take control over events and circumstances that ‘take place’ in their lives...if we acknowledge the real complexities and contradictions inherent in each site of intervention, seeing differences and similarities, we would be required to continually negotiate meaning and position – including where we as ‘experts’ are located.” These new

spaces that encourage the above are called “border territories”. In these spaces knowledge is exchanged; knowledge and experiences that are constituents of place, expert artistic talents, expert historical knowledge and expert scientific knowledge are shared and debated. With these exchanges come reciprocal learning, the power to act and the potential of populations to take control over the circumstances of place in their lives.

The paper further argues that architecture should be placed within the public realm. “A class of experts is inevitably removed from common interests as to become a class with private interests and private knowledge, which in social matters is not knowledge at all” (Ibid: 131).

“Spontaneous schooling”

At the London Festival of Architecture 2010 the concept of “spontaneous schooling” was introduced (Woolford, 2010: 159). This is a process where workshops that facilitate the latest design work and research are presented. The results of the workshops are then publically displayed through installations, drawings, models and electronic media as well as scale 1:1 objects and components (Fig 2.8). The curator of the event, Malissa Woolford, states the following: “Successful workshops are not over thought or have predetermined outcomes”. She continues by criticising the notion that failure is not allowed in architectural workshops, because schools are too high-stake orientated. She believes that not only the product, but the methodology acquired and the decisions made in workshops are what is important.

After the completion of these workshops a survey was done to establish where the success of these workshops lies. The participants agreed that the intensity, creativity and brevity (time constraints) are the factors that contribute to the success of the workshops. Furthermore, it was felt that the end result should be some type of object or model that can be displayed and scrutinised, otherwise too much will be lost if it is never exhibited.

“Beholden as most design education is to accreditation and assessment, there is little room for spontaneity in contemporary schooling which is exactly why ‘spontaneous schooling’ [was] so valuable” (Antwood, 2010:161).

Possible solutions for a more balanced relationship between architectural theory and practice

Theory Architecture Practice



Figure 2.7 Summary of possible solutions for a more sustainable relationship between theory and practice

Architectural education conclusion

The lack of synergy and interaction between the educational facilities and the architectural industry is evident. The need for a sustainable, stable relationship between architectural theory and practice is established and it is evident that the poor condition of this relationship has a spiralling effect on the architectural condition. Even though there are many examples of attempts that were made to address this lack of synergy, the diversity of the solutions is evident.

The restoration of the relationship between theory and practice will therefore not be a simple, once-off intervention that will address all the issues simultaneously, but rather a process. This process is bound to change and develop as the arduous relationship between theory and practice is re-established and this should form an integral part of the design.

The proposed structure must therefore be able to accommodate very different scenarios and circumstances in order to be a successful platform for the development of this relationship.

“The medium is the message” exhibition

Students at the Polytechnic University in San Luis Obispo were given the assignment to install land art in order to map or understand the impact of design in public spaces. The approach was to encourage the students to produce work that will attract public participation. It is argued that spaces that are readable, orderly and controlled are often experienced as dead in contemporary society. Michael Sorkin’s premise is that public space should be utilised by higher education in order to create engagement with contemporary social issues within the public realm. This will enable the public to have a deeper understanding of academic knowledge and “...opens up potential for its future application, unveiling public space as the critical stage upon which positions of identity are established and negotiated” (Diamond, 2010: 102).

Barber (1984: 178-79) realised the importance of an active interface between the public and academia in 1984 when he stated that: “... we need communicative interaction to help ourselves think publically about the power we exercise and the decisions made”.

The “Medium is the Message” exhibition (Fig 2.9) demonstrates to future designers that the public sphere can be a forum for ideas rather than simply a market place for consumer goods. This implies that public spaces should more often be integrated with exhibitions, creating debate regarding the subject matter within the public realm.



Figure 2.8 “Spontaneous Schooling” exhibition - products from workshops



Figure 2.9 The “Medium is the Message” exhibition - example of controversial issues placed within the public realm

Architectural education in South Africa

The South African Council for the Architectural Profession (SACAP) is responsible for the accreditation of architectural qualifications. In South Africa, one can obtain an undergraduate qualification at one of the six universities (The University of Pretoria, The University of the Witwatersrand, The University of Cape Town, The University of the Free State, The University of KwaZulu Natal and Nelson Mandela Metropolitan University) followed by a two year professional qualification, which includes a Honours Degree in Architecture and a Professional Master's Degree in Architecture. Alternatively one can study through an accredited university of technology, obtaining a MTech Architecture: Professional Degree. This degree is obtained in a minimum of six years, including six months practical experience (<http://www.sacapsa.com/>).

The structure of architectural education in South Africa

The structure of architectural education in South Africa has drastically changed over the past 10 years (Steyn:2010). The promulgation of the Architectural Profession Act (Act 44 of 2000) is the main reason for this change as it prescribes that practitioners should be registered in one of four categories - those of Professional Architect, Professional Senior Architectural Technologist, Professional Architectural Technologist and Professional Architectural Draughtsperson. These categories signify a specific focus in the practitioner's work and by implication

the level of training. SACAP obtained management power through the promulgation of the Act as it made the accreditation of academic institutions possible. After SACAP was admitted to rejoin the Royal Institute of British Architects (RIBA) and the Commonwealth Association of Architects (CAA) – the main international accreditation bodies – the structure of architectural education changed to coincide with international standards (Henderson, 2000:16). What was always a five year Bachelor of Architecture degree is now a three year degree and thereafter an

honours- and masters degree that can all be completed within five years (at a university). The new categorisation of practicing architects forced schools to become more industry orientated and students are trained according to the requirements as set out by the Joint SACAP/RIBA/CAA Validation Agreement.

Programme contents throughout South African architectural education have undergone an examination process to comply with the National Qualification Framework (NQF) as well as the international bodies. The

new Higher Education Qualification Framework (HEQF), published in the Government Gazette of 5 Oct 2007, introduced a new standardisation of requirements for the obtaining of any qualification. A credit value system has been developed where every point represents 10 hours of learning; for a Master's Degree in Architecture 660 credits need to be accumulated during the education process. Steyn states that this is only a hypothetical indication when referring to architectural education in particular, "as design problems take much more time!" (Steyn, 2010).

Figure 2.10 is a summary of the structure of South African architectural education as well as suggestions made with regards to how the gap between theory and practice can be breached by influential role players in the education of architecture.

Architectural education currently in South Africa

Prof Jo Noero argues that architectural education is at a crossroads in South Africa and that it “needs redefinition if it is to be able to provide the kind of understanding that graduates need if they are to become effective professionals in the design of the built environment” (2000: 169).

In a personal interview with Prof Gerald Steyn of the Tshwane University of Technology, he stated that the university has a responsibility to prepare students for industry. He believes that the basics in architecture first need to be taught before further exploration and daring projects can be attempted (Steyn,

2011). At the University of Pretoria the aim is not to teach technical detail and specifications, but to guide the student into the exploration of possibilities and then aiding them in detailing and specifications (Van Rensburg, 2008).

The six-month mandatory work experience that is required by universities of technology is an attempt to prepare students for the realities of practice once they have completed their studies. This is a useful process, however, the management and control over the quality of experience is lacking. As stated earlier by Christine Hawley, such students are often

exploited and not necessarily aided in the educational process, but rather misused by the industry.

Every university has a different focus and different approaches due to the nature of the education of architecture. Even though the accreditation of the programmes are regulated and controlled on a national as well as international level, the university’s individual relationships with their direct architectural industry cannot be managed in this way.

Architectural education in South Africa's relationship between theory and practice

Theory Architecture Practice

The structure of South African architectural education changed due to the Architectural Profession Act (Act 44 of 2000)

Academic Institute Accreditation

Giving the profession the medium to control education and syllabis

Education levels coincide with international standards

Three years Bachelors
Two years postgraduate studies

The New Higher Education Qualification Framework (HEQF) (2007) - the standardization of degrees in South Africa

Professionals must be registered as:

1. Professional architect
2. Professional senior architectural technologist
3. Professional architectural technologist
4. Professional architectural draughts person

RIBA, CAA, SACAP Validation Agreement

Practice orientated education

The Department of Architecture at the University of Pretoria is in need of a new research facility
Karel Bakker - The University of Pretoria

To allow for better university based projects - involving students in real projects

Physical construction skills and the art of building should be taught at school
Braam de Villiers - Practicing architect

Empowering the student to be more capable of working in the industry - understanding the art of building. Learning from those in the field.

Popularisation of architectural research
Making archives more accessible

Enabling research done at the university to reach the industry more effectively.

Combination of Schools in the Built Environment
Randall Bird - University of the Witwatersrand

More comprehensive and realistic research

The university has the responsibility to equip the student to become an architect - the school should teach the theory and specifically focus on the technical
Gerald Steyn - Tshwane University of Technology

Producing architects that are ready to adapt quickly in a working environment

All educators of architecture should actively be involved in practice
Jo Noero - The University of Cape Town

Enabling the educators to be more informed about practice and teach students accordingly

Figure 2.10 Architectural education in South Africa's relationship between theory and practice

Conclusion

Noero (2009: 100) propagates that all educators of architecture should actively be involved in practice, but this is often problematic as it is very difficult to manage a productive practice and simultaneously educate successfully. Adele Naude Santos, who was honoured with the 2009 Topaz Medallion for Excellence in Architectural Education, also believes that it is important for educators in architecture to be actively involved in practice. She believes that it improves her ability to aid students successfully in becoming well balanced and informed professionals (Naude Santos, 2010). However, it is not always possible

for educators to be fully focused on education and practice. The personal experience of educators can therefore not be the only mechanism that prepares students for industry – a more active relationship is required between education and practice.

Even though the accreditation bodies and governing entities are doing everything in their power to integrate education and practice, it is the responsibility of the individual educational facilities to establish an active platform for the interaction between education and practice. The accreditation processes can

only be performed over a large period of time, but the realities of the interaction required in order to create a sustainable relationship between theory and practice on an active and individual level, is almost daily.

The relationship between architectural theory and practice should therefore be addressed on a smaller scale and should be community, industry and educational facility specific. This will allow the relationships to develop over time and become a sustainable mechanism for the interaction between theory and practice.

Theory conclusion

Architecture is dependent upon both theory and practice and the relationship between the two. This relationship needs restoration after the nature of architectural education has developed into an academic-based education. The relationship needs to be re-established and developed because society has changed since the segregation of theory and practice.

New types of relationships between theory and practice should be identified and systems that will encourage these relationships to exist need to be developed within

current societies. The dependency and integration between architecture, theory and practice should have a platform from which it can function and exist.

The South African context and the way architects are educated in South Africa forms an integral part of this relationship that will allow architecture to be restored as an influential role player within South African society at large.

The relationship between architectural education and the industry creates the

potential for continuous development in architecture. A once-off intervention will not result in a sustainable relationship that will benefit all the related parties. A system should be devised to create a forum for the interaction of the different members of the built environment in order to establish and build a relationship that can be sustained.

An attractive, yet functional building, that can adapt to reflect technological development in architecture within the South African context, creates the platform for the interaction between

many different entities and individuals. The Built Environment Staging Centre (BESC) will act as a meeting place between theory and practice. It is clear that many individuals have different opinions and suggestions on how to address the lack of synergy. The BESC should therefore merely be a facility that encourages interaction, but does not necessarily regulate the interaction. The adaptability of the continuously changing spaces can be manipulated to fill the current needs on a daily basis.