What Games Education Can Learn From Architecture Education

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Flinders University / Kangan Institute

This talk offers a quick look at Architectural Education - the oldest formAL design education – to see if there is anything Games - one of the youngest areas - might learn from it

We recognises that today's games courses are being developed and taught by educators from diverse backgrounds. We all carry a legacy of personal pedagogical experiences

We are both architectural graduates.

Mark – when we use the word design in terms of games we use it in the broadest possible sense: code, art, gameplay…etc

Interactive Screen Arts Program Manger - Screen Victoria

Games Curator – Australian Centre for the Moving Image

Director Games Program, School of Media and Communication RMIT University

Researcher, Flinders University

Introduce yourself

I'm a graduate from RMIT architecture but I graduated in a recession and used my skill working in the museum sector where I eventually became a curator of videogames .

And established the Games Lab at the Australian Centre for the Moving Image

Till December last year I was the Program Director with the RMIT Games Program in the School of Media and Communication.

In this role I restructured two of the games degrees: in art and design

(but not the game programming degree which belongs to the school of computer science)
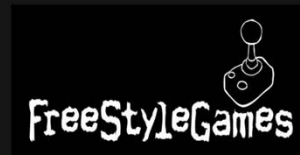
I'm an architectural graduate of Dublin Institute of

Technology, and I enjoyed a moderately successful career for about ten years, becoming a lead architect on major projects.

Eventually I became disenchanted as it my job had become more administrative than creative, and retrained in computer animation and modelling .

I have 10 years experience in the games industry with 7 published titles.

(I discovered there were lots of transferable skills from my previous career, and that these were actually more in demand than my animation skills.)

More recently I've been working in games education, both vocational skills based training , and the higher education sector.
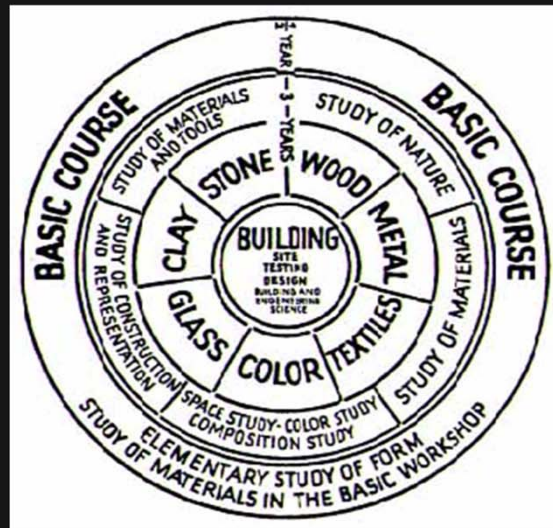
What can games education learn from architectural education

Games education has taken from architectural education the idea of studio teaching.

Computer Science and engineering courses introduced project based classes modelled on the architectural design studio in the 1990s.

Today most games courses feature design studio in some format .

Often however these exist only as a capstone classes at the end of the degree - rather than as the core teaching model it presents in architecture.

We see many parallels between the demands of architectural education and those of games education

Architecture and games development are both highly complex and composite disciplines, blending art and science with design and pragmatic considerations

They demand a broad set of skills in their execution

Such as software competency, project management and aesthetics.

They both concern themselves with the design of experiences.

Mark - The both respond to volatile industries.

Addressing the opportunities and demands of technology change

(Rapid technological innovation has a greater impact on games)

❑   - design studio as the focus for design   education

❑   - models for knowledge transfer between academy and industry

❑   - some thoughts on graduate attributes

Trust Me, I'm An
ARCHITECT

What can games education learn from architectural education

for this talk we will

Focus on design studio as the primary method for education

How this facilitates knowledge transfer b/w industry and academia

Addressing how design studio draws in professional architects to teach into the university.

And what kinds of graduate attributes studio teaching encourages

Mark

Architecture degrees are recognised as providing skilled graduates who find work in a diverse set of alternate industries. Which is lucky as architecture is a boom and bust industry.

Till recently intake for architecture degrees did not seem to suffer too profoundly from the volatility of the industry

University of Technology(NSW) 1956, State Library of NSW collection   Architectural Association School of Architecture 2010

The design studio

Mark

The design studio has been the cornerstone of architectural education for nearly 200 years and is becoming increasingly central to games education.

Most architecture courses will commence with a foundation studio in semester one .

Here the student is asked to start designing before they have a full set of skills – even before they have an understanding of design. And through the act of designing and the synthesis of the knowledge the student learns to value the importance of each area.

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In architectural education the teaching of a method of approach is more important than the teaching of skills… the integration of the whole range of knowledge and experience is of the greatest importance right from the start; only then will the totality of aspect make sense in the student's mind… such an educational approach would draw the student into a creative effort to integrate simultaneously design, construction, and economy of any given task with its social ends.

Walter Gropius

Helen

The quote above by Walter Gropius offers a definition of the architectural design studio.

– differing universities take differing approaches to their studio teaching in their under graduate degrees. But after foundation semester undergrad students will complete on average 4 more design studios before commencing their capstone projects.

Students identify studio as the most import class to which all other are ancillary.

The Bartlett School of Architecture one of UK's most prestigious school boasts 70% of its programme is taught and assessed through design portfolio.

RMIT Architecture

Offers a choice of 14 studios each semester to the lower pool which groups students from the 3 year undergrad degrees from semester 2 – 5

Whilst Students in their final semester of the 3 year undergrad degree are vertically integrated to do their design studio with the masters students. Encouraging mentoring by the higher degree students many whom have worked in industry.
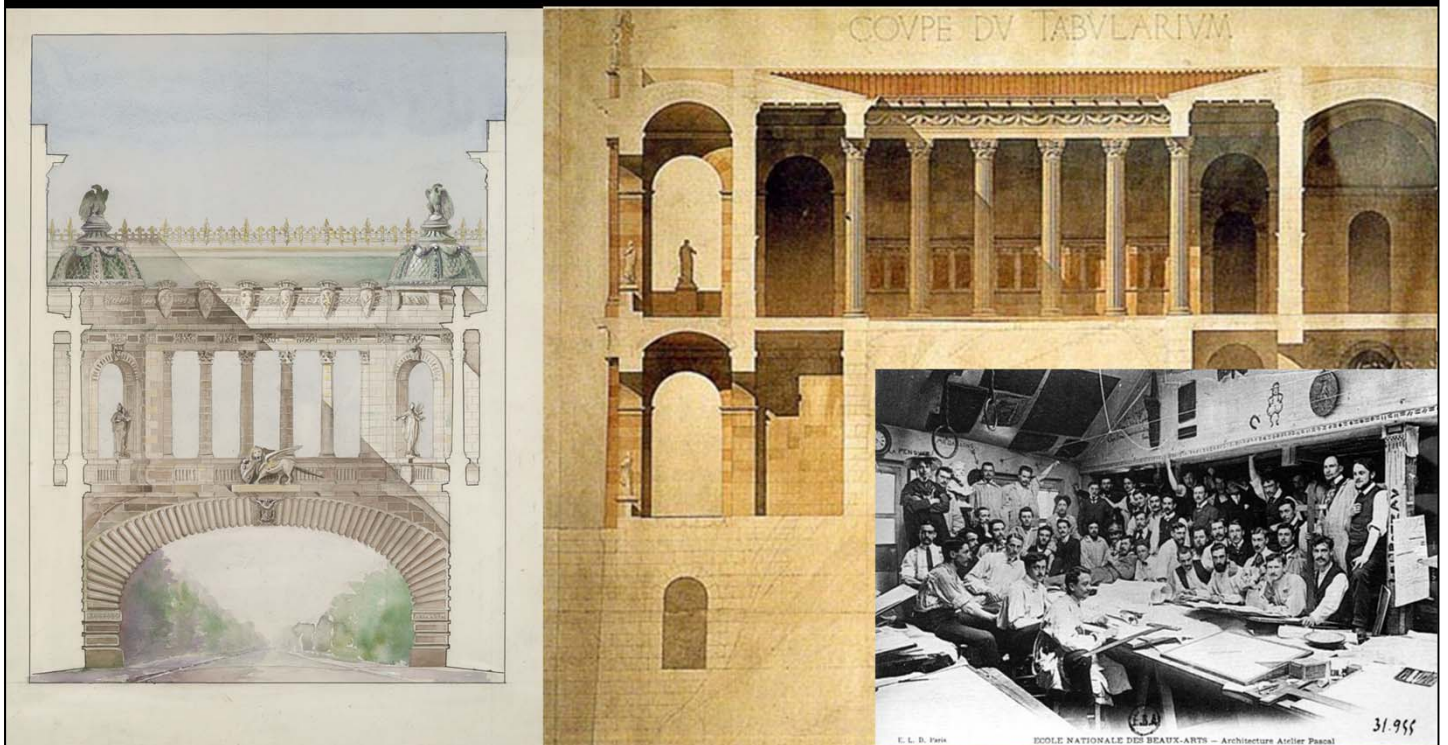
Mark

Historically apprenticeship was the standard training for architects.

It is still exists as model for games design today.

Studio teaching began at the Ecole Royale Des Beaux Arts in 19th century Paris.

Competitions were held in the ateliers (the studios). These were run by practising architects – and there was much status in attracting the best students.

Lectures on history and theory were held at the school.

At the Beaux Arts there was a separation between theory in the lectures and design practice in the studio.

The Bauhaus in the 1920s saw the integration of theory and other disciplines within the studio.

Since the Bauhaus the studio as a teaching model in architecture has continued to evolve

RIBA Conference of Architectural Education, 1958
Report by the chairman , Sir Leslie Martin

If architecture is to take its proper place in the University and if the knowledge which it entails is to be taught at the highest standard, it will be necessary to establish a bridge between faculties: between the Arts and the Sciences, the Engineering Sciences, Sociology and Economics.

Furthermore, the Universities will require something more than a study of techniques and parcels of this or that form of knowledge. They will expect and have a right to expect that knowledge will be guided and developed by principles: that is, by theory.

"Theory," as one speaker said, "is the body of principles that explains and inter-relates all the facts of a subject." Research is the tool by which theory is advanced. Without it, teaching can have no direction and thought no cutting edge

In the UK the legacy of the apprenticeship system continued till the 1950s

Post war reconstruction created a great demand for architects.

Concerns were raised regarding standards in the profession

As Less than half had attended university.

In a bid to improve the standards - a special conference at Oxford proposed the following:

- compulsory higher education.

- high entry standards consistent with those of medicine

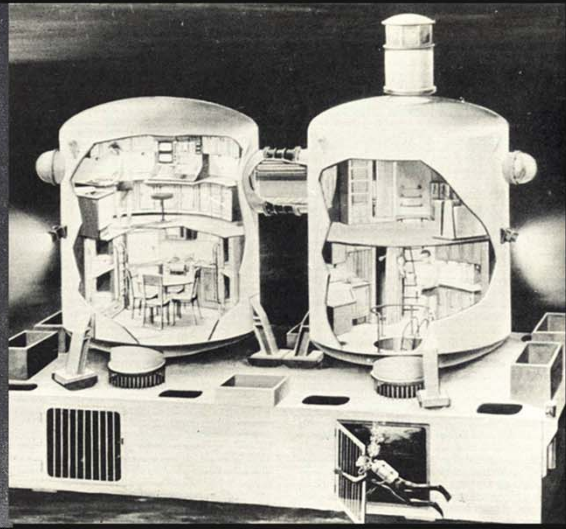- An expectation that the profession would teach into university

A university education was seen to offer the advantages:

-of cross pollination between disciplines.

-consistent standards

- Engagement with research

This situation could be seen as in the context of the current industry concerns over education standards in games.
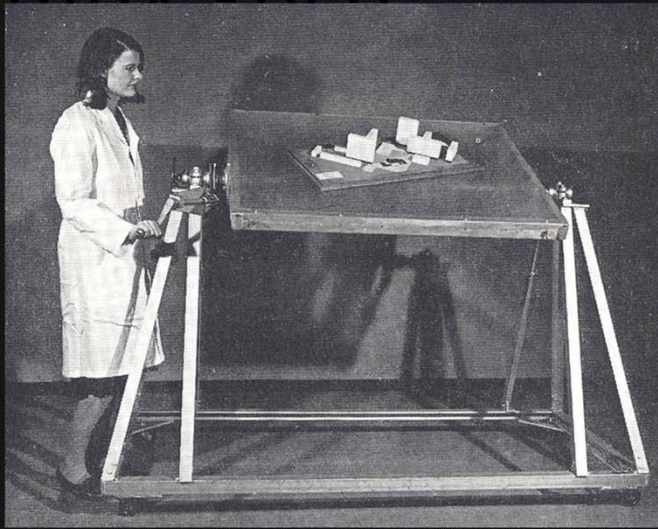
RIBA 1958 Oxford conference of education   ...architecture as extreme science...
...architecture is environmental science

The university requirements for research were seen as beneficial for both pedagogy and practice.

The dilemma was to develop a research agenda that would map to university expectations.

In order to meet these architecture (in the context of British education) was defined as a form of science.

This positioned architecture schools as legitimate schools of research in British universities.

Unfortunately this led to a strong focus on understanding architecture purely as a science.

Mark – degree bachelor of science

H – I have a bachelor of arch
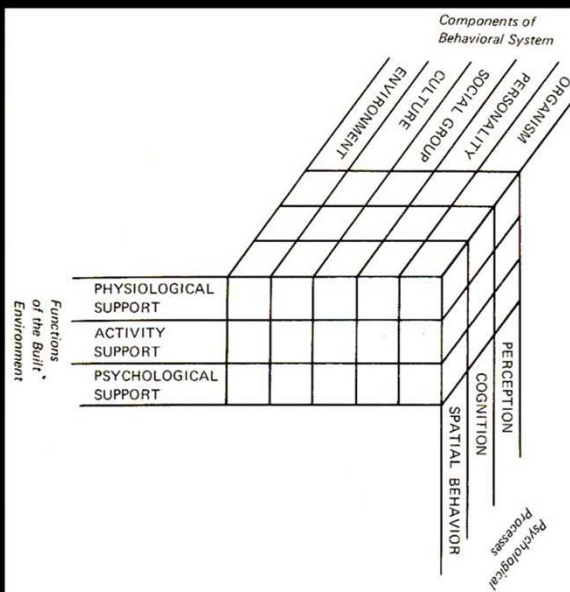
...architecture as social science failure

A focus on architecture as science limited understanding of architecture as design

This focus limited understanding of architecture as design.

Architecture draws on both science and art - neither should dominate

The teaching of games design, in addressing a similar identity crisis as to whether it is an art or science could learn from this and embrace a balance.

Helen

Understanding of architecture suffered under trying to leverage into narrow research structures

Changing Practices of Doctoral Education

Edited by DAVID BOUD and ALISON LEE
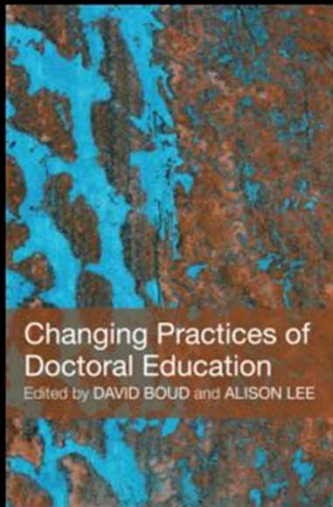
BOOK CHAPTER
Brent Allpress and **Robyn Barnacle**, "Projecting the PhD: Architectural design research by and through projects"

The Bartlett School of Architecture - *MPhil/PhD Architectural Design*

RMIT Architecture - *MPhil/PhD in Architectural Research (By Thesis or Project)*

Helen

Since the 1980s the concept of research through the medium of design has been evolving in architecture schools

This follows a precedent set by Fine Arts in the UK system of a PhD in practice

The Bartlett and RMIT architecture programs are the two centres of excellence in this area - supporting masters and doctorate research through the medium of design.

Their work may offer useful models for games programs wishing to establish design based post graduate degrees. And wanting to attract games designers from industry to do postgraduate studies.

RMIT – Shift from 5 years to 3 undergrad & 2 masters

Many of the design leaders for upper pool were all lead architects from local profession with out Masters qualifications.

Woven - Studio Leader: Sean McMahon - Lowerpool Design Studio - RMIT Bachelor of Architectural Design , Semester 02, 09

Laing He

Poh Fern Teng

Laing He

Lip Hyean Cheong

The architecture design studio will seem familiar . small groups - between 8-16 - work individually on a brief created by the studio leaders

This may be open or explicit.

They can be very conceptual or very pragmatic
Each studio focuses on differing issues
Providing the students with choice and diversity

studio leaders – are drawn from academia and industry

They have the opportunity to teach a personal research or professional interest. Often people pair from different disciplines.

The Course Guide is just a portmanteau with generalised learning outcomes around design skills and knowledge.

Allowing Flexibility. So you don't need to rewrite your course to address changes in design philosophy, or technology.

Woven Studio

The main focus of this studio is to think about how we might weave a building as both structure and aesthetic. The brief required the design of a library and outcomes focused on the creation of models – real and virtual

GDC EDUCATION SUMMIT GAME DEVELOPERS CONFERENCE® 2012 MARCH 5-9, 2012 WWW.GDCONF.COM

AA design studios

Design is an activity – it is not a body of knowledge
You learn design by designing

we all agree that you learn how to design by designing
Design is an activity - it is not a body of knowledge.

there is a body of knowledge about design - its principles
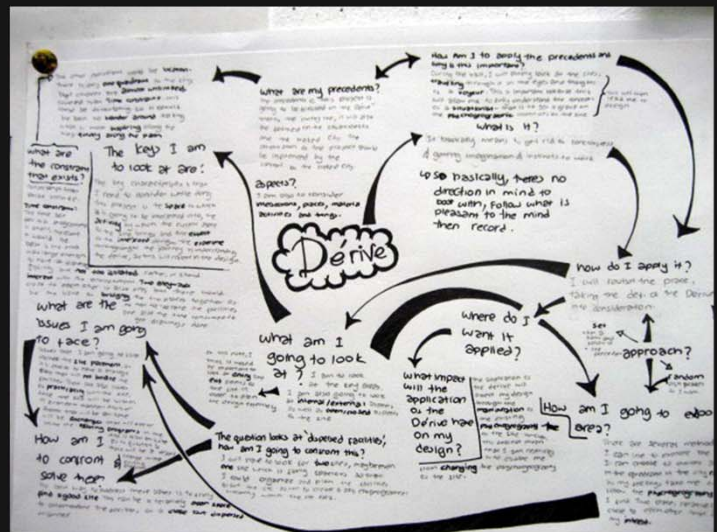histories and theories.
but the knowledge of the greatest significance

- is how to do it.
This can be taught to some extent but fundamentally it is learnt
by doing.

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Donald Schön - Reflective Practice

>Reflection in action

>Reflection on action

>Doing before you know what to do

>Addressing complexity, uncertainty, uniqueness and value conflict

RMIT foundation design studio

Professor Donald Schon developed the theory of the reflective practitioner. Based on his study of the architectural design studio in the 1970s

Schon suggested that one of the defining characteristics of professional practice was the capacity to reflect on action so as to engage in a process of continuous learning.

He proposed an epistemology of practice in which the knowledge inherent in practice is understood as artful doing.

So instead of loading students up with knowledge that they would then unload when they enter practice schools needed to teach students the art of - Reflection in action (learning while you are doing) - Reflection on action (review after completion) *

Shon's work is criticised for in part reiterating the master apprentice model – and not addressing the value of student centred learning

Student centred learning is actually central to the design studio as design is not just about solving problems. It is a question - first of all - of finding what the problems are.

Mark – arup quote

Helen – helpful in in understanding design as research

>construction technology
>environmental science
>history
>theory
>cultural
>drawing conventions
>software skills
>legal
>budget

The design studio is about enacting knowledge

Schon celebrated the capacity of the design studio to continue its focus on artistry whilst balancing the demands and complexities of numerous technical and social considerations. He identified architecture as one of the few professions where this occurred.

Mark – this is reflects complexity that game development process where game play design, programming and artistic demands are constantly feeding into each other.

RMIT Foundation Studio, 2008

AA Feb 2011

culture of critique

Charlie Smith, Understanding Students' Views of the Crit Assessment, Journal for Education in the Built Environment, Vol. 6, Issue 1, July 2011 pp. 44-67 (24)

Helen - culture of critique

Within design studio critique is frequent with both formal and informal feedback from supervising staff, peers, faculty staff and external experts.
Whilst the studio staff review the students design on a weekly basis the final design and sometimes key milestones will be assessed by a larger panel of experts.

There exists some useful research into students response to architectural critiques. Charlie Smith's paper offers a summary of many of these. It Highlight students major concerns over review panels lack of clear and consistent criteria— leaving often them confused and defensive.

Smith's findings recommend more informal round-table discussions to encourage greater peer-participation and more frequent and structured involvement of external critics and post-graduate students— this could be widened to include clients, users and consultants.
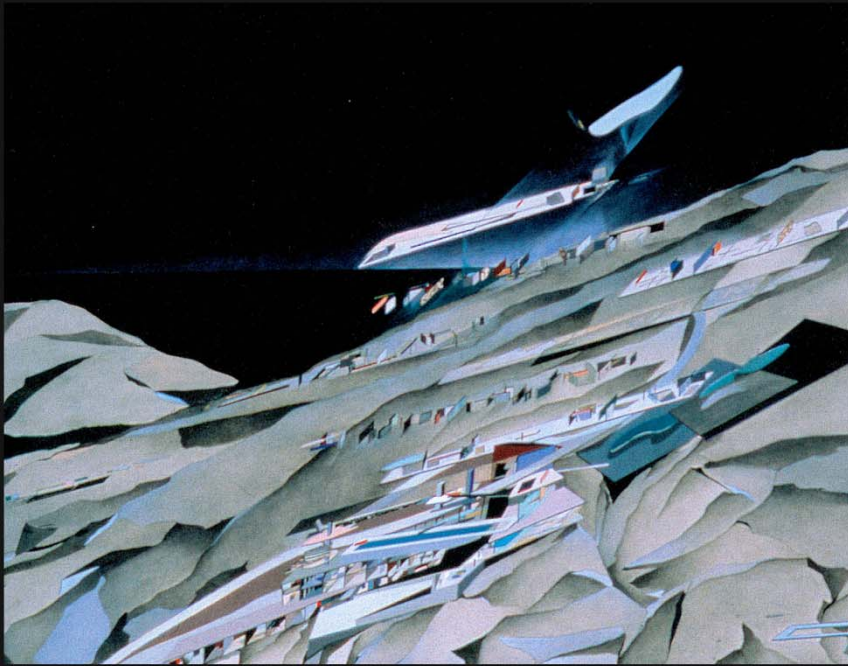
knowledge transfer

Mark

The Design studio invests local practitioners in the institution and fosters critical thinking.

Practitioners can contribute significantly to academia, without massive time demands. This makes it possible to attract more senior people on an on-going basis.

They benefit from contact with novel ideas and research.

Zaha Hadid, Steve Double, 2007

Zaha Hadid, Hong Kong Peak, 1983,

Mark –

Ideas are important to architecture. Architectural exhibitions such as the Venice Biennale and publications help sustain a wealth of experimental work.

Many architects develop their design philosophy through the ideas they explore teaching in design studio.

Games is now beginning to build this relationship to the profession. And become attractive as a place where experienced designers can produce experimental projects. It is a relationship that benefits both parties.

GDC EDUCATION SUMMIT   GAME DEVELOPERS CONFERENCE® 2012   MARCH 5-9, 2012   WWW.GDCONF.COM
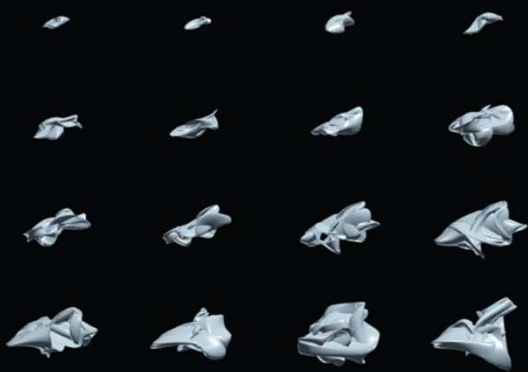
Interactivator: **Networked Evolutionary Design System**
John Frazer, Julia Frazer, Manit Rastogi, Peter Graham, Patrick Janssen
Architectural Association, London, 1995
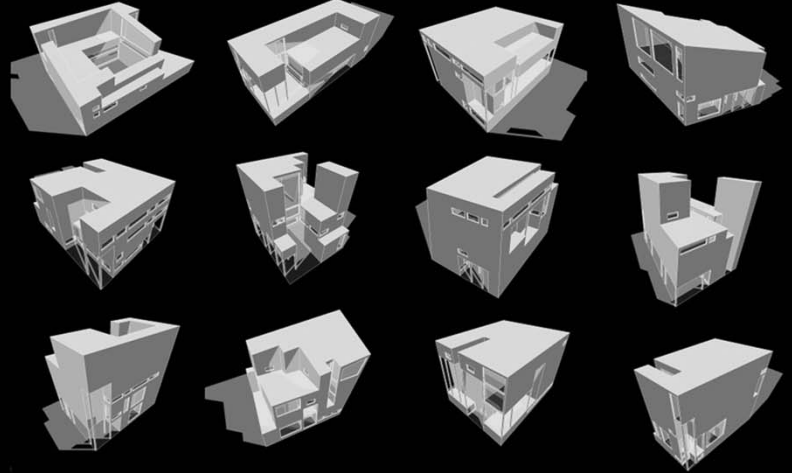
Patrick Jansenn: generating form based on an architectural schema, Hong Kong Polytechnic, 2003

Exposes industry to new paradigms

Helen

This is another example of knowledge transfer

These are Early Generative arch experiments from Prof John Frazer's studios.

Documenting a shift in design thinking from individual crafted objects to a family of forms

Industry can benefit from contact with new ideas - sometimes not the ones their looking for

For Example RMIT games Program introduced a focus on mobile games culture and design in 2003. Due to Larissa Hjorths ethnography research predominantly focused in japan and korea

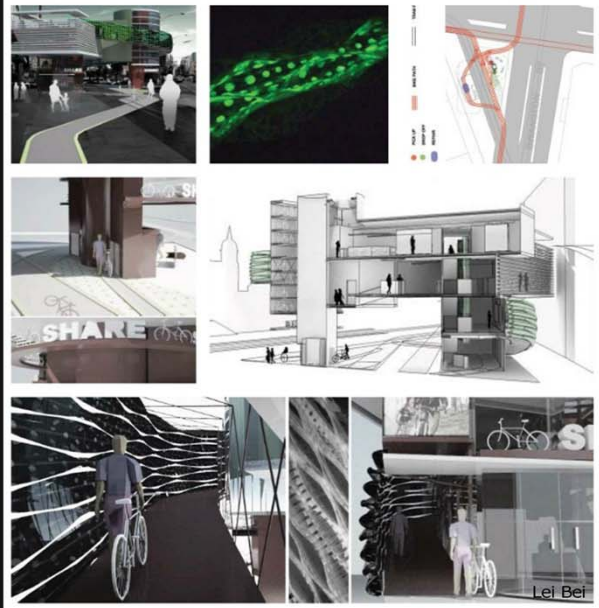At the time Local industry was rather dismissive of the idea.

But Mobile markets turned out to be rather important to Australia

Bike sharing hub

Sergej Maier

Lei Bei

AA – Burning Wastelands Leader: Leanne Nannette Jackowski & Ricardo de Ostos, 2011   RMIT – Afterglow Studio Leader: Leanne Zilka & Vanja Joffe, Sem. 02, 09

Design studio offers flexibility within the course structure to support new ideas and opportunities.

Two recent sustainability projects

Sustainability is now key to architectural thinking providing social, ethical and technological agendas to explore
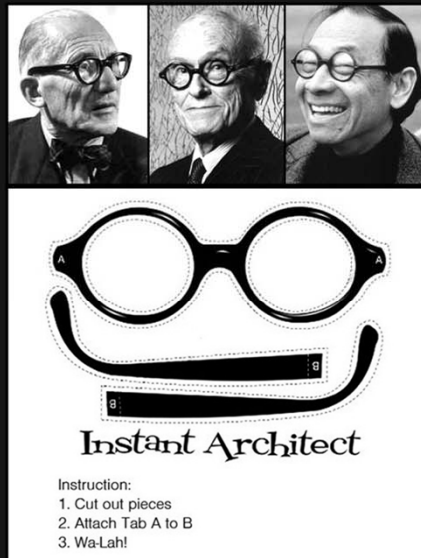
AA blue sky – RMIT was directly related to government policy around initiatives for bikes in the CDB

Relevant

AA INTERMEDIATE UNIT 3 - BURNING WASTELANDS
Nannette Jackowski, Ricardo de Ostos

Set in the rubbish dump shanty towns of Mumbai the studio to investigate alternate energy and construction possible in these environments

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graduate attributes developed in design studio

Mark

studio environment provides opportunities for students to:

>research issues

Deal with complexity

Fail safely – Fail better

Resolve competing demands through iteration

Keep quality on the agenda as part of any solution

> Develop presentation skills

>develop the ability to defend an idea

 But most important they are self reliant (self learning)

Which is critical in an industry that is constantly changing

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The architecture design studio stresses performance of the individual without acknowledging that design is a collaborative activity.

The Fountainhead, 1949, Warner Brothers

Issues of the architecture design educational studio

Mark

Potential Failings of the arch design studio-

If poorly managed there can be the potential for the studio leader to impose their view rather than address student centred learning (my way or the highway)

There is gap between the promise of studio and the reality of profession.

Many roles for the architect

Design is small percentage of an architects job

Writing specification and reports takes up more time.

So you don't really get to lead design till a number of years after graduating when you are more senior

Mark – personal reflection

Games student in studio are using the skills they will deploy in industry.

A focus on group work supports a series of important roles combining soft and hard skills such as producer and other leadership roles

Some potential advantage of the games education studio

Helen

Games student sin studio classes are using the skills they will deploy in industry.

Capstone projects are common in games degrees. This however may be the first opportunity that games students get to explore the diversity of roles and exercise their skills in developing a collaborative project.

Anyone who has taught Capstone is aware of the risks associated with group work- issues in:

- Collaboration and communication
- Process and Management
- Lack of understanding Roles and responsibilities
- And the perennial over scoping

Inherent risks are frequent due to issues such as

- Naming conventions and integration
- Version control
- Failure to test

Exposure to multiple design studio obviously reduces the impact of these risks on students final projects.

Benefits of the studio system to Education

- Offers a flexible model

- Supports a multiplicity of design philosophies

- Allows direct engagement with the profession

- Tried and tested pedagogy

Design Studio

Flexible model allows the program to embrace change and opportunities without any complications or restructuring.

supports a multiplicity of styles - Studio teachers range from artists, ethnographers to engineers

Enables industry leaders to teach into the course

And has over 200 years of pedagogy

Benefits of studio for students

- Provides well rounded education through exposure to diverse design philosophies
- Enables a student to self direct – to build a unique path
- Supports learning by doing
- Develop both their soft and hard skills

Design Studio

Students get a well-rounded education by being subjected to a plurality of styles and design philosophies and ideally other disciplines.

In selecting their design studios from the multiples on offer students are able to build a unique path (its quite possible that no two students going through would have completed the same set of studios)

Learning by doing

By developing their Soft and hard skills graduates adapt more rapidly to the workplace and also find work in other areas.

Benefits to industry teaching into Studio

- Provides exposure and access to a research culture

- Supports participation with a critical intellectual culture

- Presents a forum for interdisciplinary discourse

- Offers opportunity to workshop and publish their ideas

- Builds professional profile

Design Studio

Industry

Provides professionals with access to a universities research and critical intellectual culture

Presents a forum for interdisciplinary discourse

Offers opportunity to workshop and publish their ideas

And Builds professional profile

The Fountainhead, 1949, Warner Brothers

Architecture has been developing studio teaching for over 200 years and there is a wealth of publications addressing studio pedagogy .

Architecture is currently pioneering research by design for post graduate degrees.

Providing models that may be valuable for games

So we hope you will find Architectural Education useful as a source of ideas and recognise that games are not alone in some of the issues they are facing