

VERTICAL STUDIO PROJECT

Edwardsville Eco-Classroom



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February 2, 2010

My thanks go to all who gave their time and agreed to be interviewed, with special recognition to Mike Fedeski, without whose time and comprehensive notes, this report would never have been completed.

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Vertical Studio Project

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1. VERTICAL STUDIO PROJECT

The project discussed in this paper was just one example of a number of projects that were to be run for the first time in and by the Welsh School of Architecture (WSA). Staff members were asked to come up with ideas and produce bids for acceptance into the programme. As suggested, a number of bids were successful. Students were then presented with the successful bids and they, in turn, had to produce a bid in order to be included in the project they were most interested in. The project under discussion here, to design an eco-classroom for Edwardsville Primary School, turned out to be one of the most popular, with many students having to 'fall back' on second choices. The Vertical Studio Project was designed to include group work for students from years one and two of the undergraduate year. It was seen as an opportunity for the students across the two years to work together on something that was a little more adventurous than was usual whilst also allowing the students' access to tutors with whom they would not normally work. Given the nature of the project, it was also designed to be less heavily assessed than other modules in the course.

The aim of this paper is to report on the process, including information that might not usually be available such as instructions/directions for students, as well as providing a general overview and recording the resultant achievements.

2. THE PROJECT – DESIGN AN ECO-CLASSROOM FOR EDWARDSVILLE PRIMARY SCHOOL

2.1 AIMS

THE AIMS OF THE PROJECT WERE:

- To develop an exploratory brief and design for an Eco classroom to house the Eco-junction scheme for sustainable education at Edwardsville primary school.
- To map out a plan for the operation of the school from cradle to grave, in a manner that maximises its influence on a sustainable future in the region.
- To develop and design communication "tools" for whole systems and ecological design.

The project was set to run from Monday 21 April with an interim review on Tuesday 6 May. Work to be completed by Wednesday 21 May for presentation at Edwardsville School.

2.2 PEOPLE

Project leader: Mike Fedeski

Collaborators: Jonathan Rigby (viewpoint 1)
John Whitehead (viewpoint 2)
Glenn Davidson (viewpoint 3)

Students: Students of the Welsh School of Architecture – a group of twelve students populated 50/50 from years one and two.

The student group were to make up three teams and although each team would be responsible for taking one of the three different viewpoints, the teams were also to work together on the development of all the ideas to establish their relatedness.

2.3 BACKGROUND

Edwardsville Primary School in Treharris has been establishing itself as a role model for promoting sustainable living for its pupils and the community. Its deputy head, Jonathan Rigby, leads Eco-junction, which aims to facilitate sustainable initiatives in schools in four neighbouring counties through project based, active learning. The proposed eco-classroom will be the central base for Eco-junction and a teaching space at Edwardsville primary school.

The eco-classroom project grew out of conversations between Jonathan Rigby and John Whitehead of Sustainable Futures South Wales. Sustainable Futures is developing a "Light foot" College for Sustainability which will be based on productive teams of skilled practitioners working collaboratively in the areas of renewable energy, sustainable building and whole systems design.

Alongside this, Sustainable Futures has been working to develop design and communications tools for sustainable and whole systems design with Glenn Davidson of Artstation. These tools were to be brought into the process of generating designs for the Eco-Classroom prototype.

3. THE BRIEF (AS GIVEN TO THE STUDENTS)

3.1 VIEWPOINT 1. DESIGNING THE BUILDING. OUTPUT: A BUILDING DESIGN.

You are asked to produce a conceptual design, or design alternatives, for the classroom, seen as a prototype for the Eco-junction scheme. The eco-classroom will be built next summer, using a local architectural practice yet to be nominated. This WSA project is intended to rehearse the concepts involved, develop a brief, and test it in an exploratory design. **Jonathan Rigby** will assist in running this viewpoint.

A small free-standing building is envisaged that demonstrates the sustainable principles that Eco-junction is trying to teach and promote. It will be a single space for teaching up to 30 children (aged up to 16), for community use (e.g. meetings), and for housing a small, growing library of paper-based resources. It will need externally-accessible storage for horticultural tools. The client would like it to be inspirational, beautiful, iconic (it will represent the Eco-junction for visitors), and integrated into the immediate natural environment. He is looking for low cost, low-skill building techniques, for low-energy construction, for low energy consumption in use, for high use of sustainable or scrap materials, for accessibility for all potential users, and for flexibility to respond to developing use over the next 30 years. Features may include rain-water capture and filtering, use of solar energy for space heating and clothes drying, integration with permaculture food production, broad-band internet connectivity, and glare control for an interactive whiteboard.

The construction method should be specifically designed to include teachers, children and members of the local community in the building process at a range of stages and levels. Of particular interest is the relationship between hands-on on-site work (e.g, rammed earth for thermal mass) and off-site work (e.g, timber frames and high-insulation materials) training people from the local community in new skills.

3.2 VIEWPOINT 2. PROMOTING SUSTAINABLE LIVING. OUTPUT: A CRADLE-TO-GRAVE PLAN FOR OPERATING THE SCHOOL.

From this viewpoint, you are asked to think about the place the school could and should have in the community, in the propagation of ideas and practices, and in shaping the future. The outcome of this thinking feeds into the brief for Viewpoint 1. We will be assisted by **John Whitehead**, of Sustainable Futures, who was instrumental in

establishing the eco-classroom project. John is an artist, sculptor, designer and fabricator with a particular interest in the forms and functions of the built environment and their relationship to the ecology of landscape and people.

The building is to be both a learning environment and a teaching tool. It should embody and communicate sustainable living practices at all stages of its development, so that it supports the teaching of Education for Sustainable Development and Global Citizenship and demonstrates whole systems sustainable design and practice to a wider audience. It could provide teaching material for teaching at a higher level.

In its development and use, the building is to invite participation (at a range of levels) from children, teachers and members of local communities, in a way that facilitates learning by experience. It should reach out to the local community, influencing the minds and hearts of children, families, colleagues. The design and production process should generate practical skills for implementing further sustainable projects between schools and communities. It should develop capacity in the region to manage such projects, with a view to making opportunities for a more sustainable future for construction in the region.

Lessons will be sought from other sustainable community projects, such as Down to Earth (Mark McDonald and Jen Hughes), Rural Studios (Samuel Mockbee), and Earthship (Michael Reynolds).

3.3 VIEWPOINT 3. REFLECTING ON THE PROCESS. OUTPUT: A WHOLE SYSTEMS DESIGN TOOL FOR EXAMINING KEY PRINCIPLES.

Some tools will be introduced into the design process to assist in uncovering issues and generating ideas. Tools are being developed by Artstation to draw attention to the wider significance of concepts that arise in the eco-classroom project, and we will be joined in this viewpoint by **Glenn Davidson** of Artstation. Glenn is an artist who designs and builds spaces and installations at an architectural scale.

This viewpoint invites you to reflect on the process you are undertaking. The Artstation tool, in common with many others, arose from such a process of reflection whilst undertaking design. By unwinding the process, it will be used as a catalyst for the development of your own tools for exposing the relationships between ideas that you find to be important whilst working with the other students on the building design and the sustainable living system it promotes.

There are issues at a global and political level. Where are the boundaries which should limit your thinking? If you can find none, how do you structure “everything” in a way that makes it useful?

At another scale, there are issues at a personal and phenomenological level. What is the impact of the whole project on the spirit and the senses of the building users. What does it mean to live in a sustainable manner and what does it feel like to work in a sustainable environment?

Reflecting on questions such as these, you are asked to represent the ideas and assemble them into something that others could engage with and use to advance their understanding. For example, you may render your ideas spatial, or present metaphors. Metaphors behind the Artstation tool were the card table and the game.

3.4 LEARNING OUTCOMES

At the end of the project you should demonstrate that you have been able

1. sustainability: to make penetrating yet practical proposals for the eco-classroom’s contribution to environmentally and socially sustainable futures (this criterion relates to viewpoint 2)
2. design: to develop an inspiring yet realistic design for the eco-classroom and its site that enables a contribution to sustainable futures to be realised (this criterion relates to viewpoint 1)
3. reflection: to draw far-reaching yet useful lessons about design for sustainability from reflection on the process of design and research undertaken during the project (this criterion relates to viewpoint 3)
4. communication: to represent and communicate the results of the project in appropriate descriptive, metaphoric and graphic forms, which should include engagement with children (this criterion to be awarded separately for each viewpoint)

3.5 SUBMISSION ADVICE

There is no schedule of items required for submission. The rule is that the submissions should be fitting to the aims and objectives of the project and its viewpoints as given in the main brief and expanded in the group sessions that have been held subsequently. The following additional notes might be helpful, however.

There are two presentations, one for Edwardsville school and one for the final crit. Part of the presentation for Edwardsville school will be to Jonathan Rigby, and possibly other staff, and this can use the same material that you prepare for the crit. But part will also be for school children (the year 4 children, and the members of the Eco-Committee and the School Council), and this will require material of its own in a form suitable for young people, some of it in the form of activities. A record of this specific material should be included in your presentation for the final crit. Jonathan is seeking permission from parents for you to take photographs of the activity. This will be assessed as part of the 4th learning outcome.

You will make the presentations as a group. It is not necessary for any of it to be identifiable as the work of a particular student, although there is no reason why it should not be. It is more important to integrate work by individual students into a coherent whole. Similarly, the work on the three viewpoints should be integrated, and the paragraphs below suggest some ways in which this could be done.

The presentation of viewpoint 1 will deal with planning, materials, construction, and the use of space, inside and outside. One would expect to see plans and sections with supporting diagrams to explain the construction method and the variable usage of the space. Viewpoint 1 must give significant attention to the site around the classroom which is to be used as part of the class activity; it would be appropriate for the site to be given as much weight as the classroom itself. Typical activities could be described in detail to illustrate how the planning of the school facilitates them or the design of its fabric and systems provides learning material, and these could draw on a more comprehensive account of the activity of the school given in the second viewpoint.

Viewpoint 2 will broaden the picture spatially and temporally. The presentation should suggest a programme of activities that the schools could undertake in order to facilitate the dissemination of knowledge and enthusiasm about sustainability. It should investigate the pathways along which the dissemination will occur by, for example, mapping networks of contact and influence between Edwardsville School and the rest of the world. It should show the development and scheduling of these networks over time. It is important that the pathways are not left "empty"; the kinds of idea or experience that it is hoped will traffic them should be described. These may relate to the themes discussed in viewpoint 3.

Viewpoint 3 is primarily about reflection on the process by which the results of the other two viewpoints have been arrived at, and on lessons that can be drawn from that reflection. The lessons learned will be able to inform the programme of activities discussed in viewpoint 2. A possible form for the presentation is for there to be a

number of reflections, each dealing with a different lesson, such as one on the major themes in sustainability that have emerged, one on the way design ideas develop, and so on. The results should be useful in that they should be capable of application to design. In particular, it is anticipated that there will be some kind of design tool resulting from the reflection.

3.6 APPENDIX

For your information, the generic learning outcomes that were declared when proposals for vertical studio projects were invited, are as follows.

- engage critically with an aspect of research in the field of architectural studies, and to understand this in relation to the wider context of architectural design and research;
- demonstrate an understanding of architecture as an integrated discipline that utilises a broad range of research approaches in order to respond to the many questions raised by the discipline and its practice;
- represent and communicate the results of their work in appropriate forms: hand drawing; digital or physical modelling; tabulation; visual, written and oral communication etc.

4. THE TEAM, THE SCHOOL, AND THE DESIGN TOOL

4.1 MIKE FEDESKI is a senior member of staff at the WSA whose main interests are in environmental and passive building design and in urban 'sensescapes'.

"In recent years there has been a growing interest in the role of non-visual senses in the relationships between people and places, in particular how 'sense of place' involves complex corporeal encounters with our environments - how we 'sense' place in terms of sound, smell, touch, taste (alongside sight) as well as understand it through social constructions and circulated texts (Wylie, 2005; Butler, 2006; Edensor, 2006; Pink, 2007). Such interest is evidenced in the publication of 'The Senses and Society' journal since 2006, and includes an increasing body of work regarding the ways in which senses and sensory perception are caught up in social and spatial in/exclusion and everyday cultural geographies (e.g. Tolia-Kelly 2007, MacPherson 2007, and Paterson 2007)".

(<http://www.sensescapes.co.uk/RGSSensewalkingCFP2009.htm>)

4.2 JONATHAN RIGBY is deputy head of Edwardsville Primary School, and drives its sustainability programme.

In December 2006 the School gained a silver award from the Eco-schools programme, which provides an international framework to support sustainable development within schools. Its eco-committee meets every Thursday lunchtime and has on it one child from each class. This reviews the School's impact on the environment, has recycling and paper-



Plate 1

saving schemes, grows food in an allotment garden, and grows willow for shade. It has written its own Eco-code, and rewards classes with "Green Star Awards" for environmental class work.

The school also has an herb and sensory garden and a log circle with mini-beast-haven seating. It is also transforming the front garden into an eco-historical sculpture park and is getting an owl-box with a web-cam. The school has further plans to make the most of its extensive grounds by becoming a Forest School, a Forestry Commission initiative that aims to encourage and inspire individuals of any age and ability to grow in self-esteem, self confidence and independence by using the outdoor environment for learning through small achievable tasks.

Jonathan is spearheading Edwardsville Eco-junction, whose brief is to facilitate sustainable initiatives in schools in, initially, the four counties of Merthyr, RCT, Caerphilly, and Mid Glamorgan, through project based, active learning linked to curriculum development. It plans to develop the school grounds, for play, learning and caring for the environment, for the benefit of nearby schools and the community as well. To this end, it is developing links with the Forestry Commission, Groundwork Trust, B&Q, Play Wales and others.

4.3 JOHN WHITEHEAD has been a performance artist, sculptor, designer, blacksmith, eco-builder and activist for the past 30 years. His main interest is in facilitating practical and creative multi-disciplinary approaches to whole-systems sustainable development. He has a particular interest in the forms and functions of the built environment and their relationship to the ecology of landscape and people. He is currently the driving force behind the South Wales Sustainable Futures initiative.



Plate 2



Plate 3

John has previously worked on collaborative projects with One Stop Architects, LEDA (Leeds Environmental Design Associates) and the Hockerton Eco housing project.

Illustrated on the previous page are a bridge at the Hockerton Housing Project, and a spiral staircase in ash, stainless steel and glass, all designed and fabricated by John.

4.4 GLENN DAVIDSON, fine artist and communicator, is one half of Artstation (www.artstation.org.uk), Cardiff-based “innovators in performance, art, video, installation, interactivity and technology systems.” With his partner Anne Hayes, Glenn has developed many internationally acclaimed projects dealing with a wide range of social and environmental issues. They design and build spaces and installations at an architectural scale. These are propositional, temporary structures. They also work with digital/video animation and 3D modelling.

Their work can result in events and exhibitions in galleries, museums and public spaces. Artstation projects include a series of huge architectural paper installations and the innovative ARTMAP interface to the *LANDMAP* national information system for the Countryside Council for Wales.

Illustrated below is a paper installation for the Stuttgart Garden Festival and to the right one in Brighton’s Fabrica gallery.



Plate 4



Plate 5

4.5 THE DESIGN TOOL

The images below were produced by John and Glenn in the course of developing ideas for the Eco-junction scheme for sustainable education at Edwardsville primary school. They concern possible connections between school and community that would promote a sustainable future for both. The images show stages in a design process – the process of designing a system for sustainable living.

One of the by-products was a diagram that could be used as a design tool (bottom right), which captured the essential concepts and issues that had informed the process and the relationship between them, but in a way which allowed new associations to be found and new design ideas to emerge.

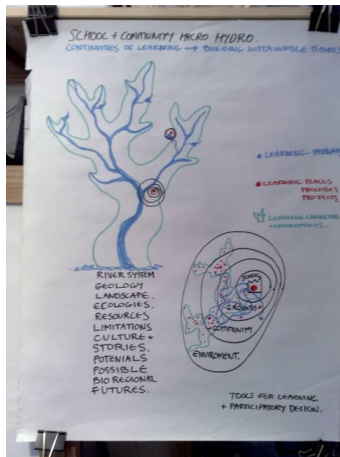


Plate 6

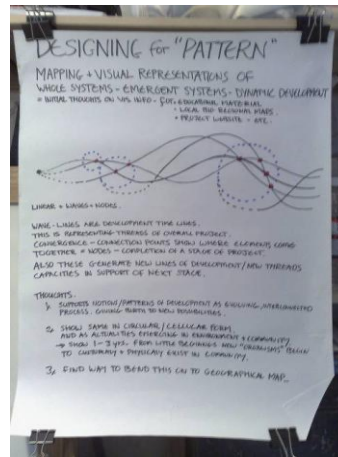


Plate 7

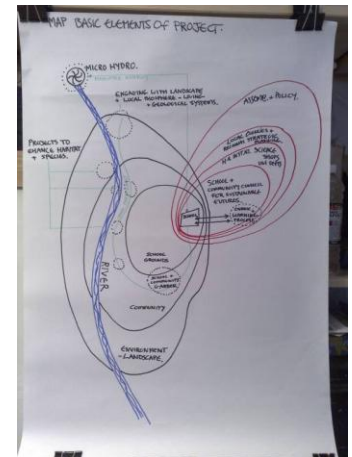


Plate 8

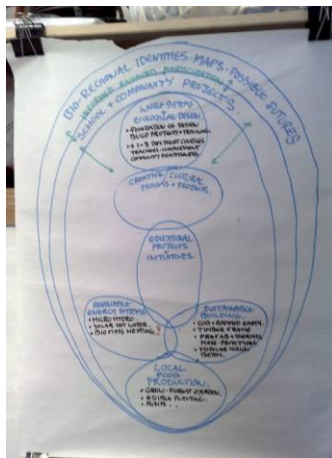


Plate 9



Plate 10

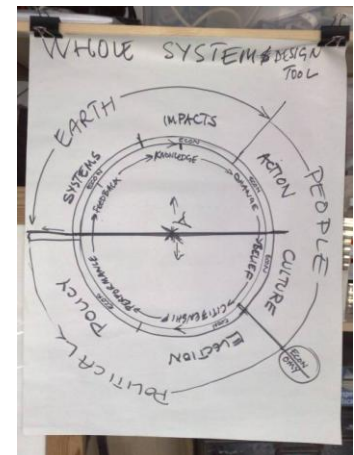


Plate 11

5. THE PROGRAMME

5.1 SESSION 1

The first session (April 21st) was to be led by John Whitehead and would take place in a yurt to be erected by the students.

This space was created to help facilitate awareness raising of both the nature of environments in eco-buildings and of some of the problems that would need to be overcome in the designs.



Plate 12

This session was to cover the broad picture and the WSA's place in it with the plan for the session as follows:

General introduction to the aims and background of the project

The broader picture of sustainable futures relating to Whole systems approaches briefly mentioning the work of:

Lovelock: Gaia theory & geophysiology,

Maturana and Varela: Santiago theory of cognition,

Lynn Margulis: Biologist working on symbiotic evolution,

John Todd: biologist and designer of living machines technologies,

David Abrams & Arnie Ness: philosophers developing an ecological perspective,

David Orr: educator with broad perspective on sustainable issues and ecological design,

Buckminster Fuller: engineer who redefined the way we look at buildings.

Exercise - playing with materiality and presence.

Core questions

Mapping out the context of the project and relationships between:
Structures, buildings, materials & process

Community & relationships & process

Reflective tools & ways of knowing, doing and being & process.

Short explanation of Process Work tools and concepts around systems, identities and boundaries or edges.

Group exercise to explore individual and group identities in relation to the elements / aspects of the design process for the Eco- Classroom.

DreamTime work on "How does the world become real?" How does this relate to modes and structures of knowing? And how does this relate to our personal senses and intuitions of a deeply satisfying learning experience / environment / process? What's the relationship between learning, knowing and being known? Channels of perception and How do we know the world?

Some short exercises in following and shifting channels of perception and how this affects peoples sense of space, physicality, movement, form, mass, function, time plus values, qualities and significance.

Followed by - a seminar session to include some exploratory work on emergent issues.

5.2 SESSION 2

Session two (April 22nd) was to be led by Jonathan Rigby. For this, the students were taken to Edwardsville School to see the site and meet the clients.

The students were to survey the site, taking dimensions, particulars of nearby services, changes in ground level, orientation, surrounding influences, and so on.

The students would then meet with two school committees - the Eco Committee and the School Council. The Eco Committee consists of a child from every class and the Council has one boy and one girl from every class, elected by the classes. The purpose of the meeting was to understand the project further, and to be able to find out what both the children and staff wanted from the Eco-classroom, the WSA students consulting with the children regarding what they wanted and what materials might be used.

The students were also to meet Jen and Mark McKenna of the Down to Earth Project (scheduled to be project managing the build of the eco-classroom) and finally, the students were to establish how the school wanted the results to be presented.

5.3 ETHICAL CONSIDERATIONS

As Edwardsville is a primary school with very young children, the students were told that they should conduct themselves with regard to the sensitivity of the situation. i.e.

They were told that they should not converse with children without a member of the Edwardsville School staff present and not take photographs of the children. They were further told that if they were in any doubt about how to behave in a particular situation, they were to seek the guidance of a member of the Edwardsville School staff.

5.4 SESSION 3

The third session (April 23rd) was to be led by Glenn Davidson and was for evolving the project plan. For this, the students were to work with tools that would help them to understand how they looked at sustainable futures, and at designing how they design.

Glenn was to begin by showing the socially engaged work of Artstation's international architectural installations through which a theory of interactivity and architecture evolved before going on to lead a session on a whole system design tool for use in reflecting on the design process undertaken. At the end of the day, decisions were to be made on how the teams would be divided and what the team and individual roles would be.

5.5 IDEAS AND GUIDANCE

The following¹ introduces some of the ideas that were to be discussed along with guidance for the students.

5.6 DESIGN

"In respect of the design of an eco-classroom, the design process itself should produce a **learning environment** in which we can be aware of our own learning during the design process.

Discoveries made during this process and how these inform those undertaking the design and in turn what this tells us about what an eco-classroom is - a circularity comprised of our intention, our perception of action and our interaction between.

Design: the verb and noun, the act of designing and the product of designing. A design may fulfil a design brief by way of an informed approach. Design in this way is a **reaction**; a practical task requiring a designer.

5.7 REFLECTION ON THE DESIGN OF DESIGN

The design of design is a provocation, taking us back to fundamentals or novice questions. Why do we design, how do we design, where do we design, and often later whom do we design for. What is this whole system and where do I fit in as a designer?

¹ reproduced with kind permission from Mike Fedeski

The design of design is about questions which are constructed from within the field of interest. Questions and possible answers **emerge** through **interaction**.

A designer involved in the design of design can not know the answer to questions before entering what we can think of as a **conversation**. The conversation is the interaction of elements within a **whole system** approach to design in which problems and their solutions emerge together.

These concepts are from The Theory of Interaction of Actors & Conversation by Gordon Pask, and the theory of Emergence (part of Complexity Theory).

The notion of the anti conference

In conversation it is said we can "agree to agree" or we may "agree to disagree". What, then, of disagreement with no agreement? What is such a state and what use can we put this to? PASK called such a state WAR, but there may be other states to consider. Un-computability for instance – a problem discontinuous with the established conversation.

Can we use the idea of such an "anti conference" as a discourse to improve design, by constantly agitative observation?.

5.8 COMPLEXITY

Communication networks as a matrix for design thought

Unplanned outcomes.

5.9 ENGAGEMENT WITH THE DESIGN TOOL

4 levels of engagement with the design tool:

1. sorting out main concepts and dimensions and linkages between them
2. evaluative tool for profiling and finding imbalances to redress
3. design assistance pointing to next (perhaps unanticipated) action
4. an exemplar for output from a self-reflective approach to design

5.10 EXERCISE

Draw a whole system diagram for the Eco Classroom".

6. DEVELOPMENT

Once these sessions had been completed (and with the on-going support of WSA staff), the students began to work on the design process. As the children of the school were an important part of the client group, part of the design process included consulting with the children in an inventive way, ensuring they get the most out of participating in this aspect of the design.

The students came up with a number of innovative ways of making sure the children had the opportunity to participate fully in the process – e.g. children were encouraged to build their own 'cob'² structures in the classroom from a number of materials including wheat breakfast biscuits and clay.



Plate 13



Plate 14

² Cob is an ancient earth building technique which uses a combination of earth, straw, sand and water. These ingredients can be mixed together by hand, using tarps, or by machinery. The mix is formed into lumps or "cobs" which are pressed together to form the walls of a building.

The children were also invited to participate in games, developed by the WSA students, which included a water game, a card game and a quiz. The children were also taken out into the playground to form themselves into 'living walls' representing the built structures. The WSA students also collected feedback from the pupils as to what they wanted from the structure. (See appendix 1)



Plate 15



Plate 16

This completed, the students were to continue to work on their designs and develop presentations that would 'build on their group work whilst reflecting the collaborative nature of the overall design work'.

The main factors were:

- 1) To design a building
- 2) Consider the interaction of the building with the community and how the community might 'find out' about the building
- 3) To expand on Glenn and John's design tool (meant to get students to monitor what they were actually doing for the design process and discuss it
- 4) To develop games for the pupils to help to facilitate the development of the children's thoughts and get a briefing from the pupils as well as from the staff of Edwardsville Primary.

Although the student groups had responsibility for different aspects of the design, they also all had an overall commitment to the end product. By the time of the presentation, the WSA students had to agree on a final design to be presented to the school and develop presentational materials that could be understood and enjoyed by both the staff and the pupils. To this end, the students developed a number of visual interpretations of their work including detailed plan drawings, artistic impressions, 3D models, games and story boards.

7. OUTCOMES

7.1 MIKE FEDESKI AND THE STUDENTS OF THE WSA

This was the first time the 'vertical studio' model had been run by the school and overall this project was considered to have been a success. Some of the more positive aspects for the students were:

- They gained access to what was described as a 'dynamic teaching team' who would not have been available to them in the normal course of teaching
- They worked with a community that they would not normally have access to (the primary school, its pupils and staff) - judged to be a success
- It was the first time the students had been given the opportunity to work collaboratively across the two first undergraduate years - the student team made up of six first and six second year students

Some of the difficulties that emerged were:

- They were expected to work on several levels
- The project was research driven (expectations of student output at this level is usually design driven)
- The brief was fairly open leading to difficulties for some students who would have preferred to have been given a more positive lead

The most positive aspect for Mike was being able to work with Glenn and John and the variety that was available within the project, with the most difficult aspect being learning to work with groups and particularly in motivating groups who were working partly together and partly independently.

7.2 GLENN DAVIDSON AND JOHN WHITEHEAD

It was considered that the students were not quite prepared for the changes in thinking that were required of them but they both felt that solid foundations had been laid for further and future development and whilst they didn't achieve all they would have liked, both Glenn and John were cautiously pleased with the overall programme and the end results.

7.3 STAFF AND PUPILS OF EDWARDSVILLE

The children of Edwardsville School were considered to have gained enormously from working with the WSA students. They were seen to have enjoyed the interaction, learned about architecture and planning and, in an area where very few get to go on to higher education, were considered to have been familiarised with the concept of 'university' in a positive way. The staff felt they had gained from the project in a number of ways including motivation for both staff and pupils and further collaboration with a number of external organisations.

7.4 DESIGN

Unfortunately, the final design was not one that could be used as there was a particular problem in that the greenhouse area was set against a disused wall, hence disallowing gains from passive solar heating being used in the new green building and it was felt that the design could have been taken further given more time. Nevertheless, one of the main outcomes required from the project was that students focus on the process of the design as much as the design itself. This was considered to have been achieved with some success with the students considered to have moved forward in their knowledge and understanding of sustainable buildings and methods. It was further hoped that the experience would form a solid grounding in sustainable design that might be built upon in the future³.

7.5 INTERPRETIVE MATERIALS

The students were considered to have turned out good interpretive materials which are kept at Edwardsville School. These include:

- Architects drawings
- Architects model
- Story boards
- Water game
- Card game
- Quiz

³ The WSA offer a course in sustainable design but this is aimed at post graduates whose output is said to be both innovative and exciting

7.6 REFLECTION

The project was deemed to have been an overall success but it was considered that there were a number of areas that might have been handled differently.

In the main, there were some problems with gathering the information subsequent to the completion of the module i.e. the module was completed towards the end of the academic year and many students were unavailable in the summer break. This was further complicated by the fact that changes within the department meant that some of the drawings and models had been moved from their original storage area, thus making them difficult to track down. Although the students fulfilled the brief on presentation (that they present their final work to staff and pupils of Edwardsville School), it was considered that, given the intention that the building also be used by the general public, further communication would have been preferable e.g. a public exhibition at which the students would have been available to interpret their designs. Unfortunately, this was not considered at the time and the project took place over too short a time to make this possible in this instance. The only other difficulty experienced was that the project turned out to be far more expensive than initially considered which led to extra funding having to be secured and collaborators providing far more time and expertise than they were paid for.

8. CONCLUSION

This Edwardsville EcoClassroom project was just one of a number of projects that were run under the concept of the 'Vertical Studio' for the first time at the WSA. This particular project was to be innovative in a number of ways which was to include a focus on the design process as well as the final design, demanding the students begin thinking in a new and unfamiliar way. Some of the main difficulties experienced in this instance included a lack of time, a lack of money and the general timing of the project, leading to a not entirely satisfactory *design* result. Despite some shortcomings in this area, the project was deemed to have been an overall success with those who participated considered to have gained in multiple ways.

Staff and students at the WSA gained from interaction with external tutors they would not normally have access to, as well as having access to the school community at Edwardsville, considered to have been both an enjoyable and successful experience. Staff and pupils at Edwardsville had access to design professionals and pupils learned about architecture, design and, considered to be equally important, the concept of

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University and higher education. External professionals were able to work in areas they would not normally access and considered the collaboration to be a success for both now and for the future. All participants said they enjoyed the experience and would be happy to be involved in a project of this type again.

APPENDIX 1

FEEDBACK FROM CHILDREN

As part of the consultation process, the students of the WSA gathered thoughts from the pupils of Edwardsville on what they would like from the EcoClassroom. The results are detailed below:

insect collectors, snails, butterflies (magnifying glasses) – inside/outside

they would like to contribute to the eco-classroom, proud that their parents contributed to cob house

liked seeing plants that they grow when they look out of the window – want to grow plants to eat

sitting: floor for some, logs, small wooden chairs, mushroom shapes; some did not like the carpets

like to move their own tables and chairs

they want to climb on top of structures (Play Wales encourage safe but risky behaviour)

buildings could dress up as something – bugs, butterfly wings

liked colours – bright for girls, dark for boys

liked looking out to forest, hearing birds and animals

excited about being outside, having direct access, so that they can track the sounds they hear outside

would like an encyclopaedia of birds and animals

the building could have ears to hear outside

shape: named all sorts of shapes, liked shapes they were familiar with

round is good as long as there are nooks and crannies

signs proclaiming that it is an eco-classroom

quite protective about **their** classroom and what visitors do with it

space linking inside to outside – cloak rooms, changing rooms

direct access to toilets from inside

outside journey to classroom important

view to the gap from the cob house they liked

computers-they-like

like learning in groups then splitting off individually

hands-on learning doing things

liked writing on walls, decorating parts of rooms, painting floors

things they liked about the cob house – the roof, looking like the surroundings, bottle windows, smell, unconventional use of material, grass on roof

favourite parts of school – grass, sitting area outside, log circle at front and trees nearby

liked all sports in their breaks, and looking at views

they preferred the site at top of hill as it lets them see up the hill

they would like something they could touch – leaves

things to make sounds – more musical instruments

details they don't like – pinholes

liked having visitors, but not if they used their toilets

would like to visit other schools to see what they do

present classrooms are too small

they like timber – it's eco-friendly

liked seeing what the cob house was made from

keen on recycling and eating up all their food