Our ref: PM/SLS

17 July 2008

JISC
Northavon House
Coldharbour Lane
Bristol
BS16 1QD

To Whom It May Concern

ECCILES Project

I am pleased to provide institutional support to the above project which aims to use an innovative methodology to tackle the improved management of the energy consumption of some of our main computer systems. The University is engaged upon a major review of its sustainability strategies in accordance with the requirements of HEFCE policy on Sustainability and is working with the Carbon Trust and Ecocampus to plan a new approach to energy management and conservation.

Simultaneously we are planning and introducing e technology into not only our learning and teaching and course delivery (see related JISC bids and projects already submitted) but also our administrative and business process systems.

The convergence of these two strategic objectives in our ECCILES project will allow us to take a major part of the campus and a concentrated area of computer related energy consumption and systematically plan for the introduction of an energy control system which will still allow for maximum flexibility in computer usage to support learning and administration.

The project is especially relevant to the JISC call because it follows up on the findings of the JISC-funded Managing environmentally sustainable ICT in Further and Higher Education and brings together our Estates, ICT and Academic personnel to work out a combined approach to sustainable ICT provision and energy control.

I hope therefore that our project may receive favourable consideration.

Yours sincerely,

Peter Marsh.

Dr Peter Marsh
Deputy Vice Chancellor

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INVESTOR IN PEOPLE

Cover Sheet for Proposals
(All sections must be completed)

JISC
Institutional Innovation Programme

Name of Area Bidding/Submitting Interest For (tick one):

Call I:	Synthesis, project support and support for benefits realisation activities	
Call II:	Large-Scale Institutional Exemplars	√

Name of Lead Institution:	University of Bolton
Name of Proposed Project:	Energy Conservation at Computing Intensive Learning Sites - ECCILES
Name(s) of Project Partner(s):	**NA**

Full Contact Details for Primary Contact:

Name: **Mr Derek Rout**
Position: **Head of Facilities**
Email: **D.Rout@bolton.ac.uk**
Address: **University of Bolton**
Deane Road, Bolton, Lancashire, BL3 5AB
Tel: **01204 903014**
Fax: **01204 521920**

Length of Project:	**18 months**		
Project Start Date:	September 2008	**Project End Date:**	February 2010

Total Funding Requested from JISC: £300,000

Funding Broken Down over Financial Years (April - March):

Apr 2008 – Mar 2009	Apr 2009 – Mar 2010	April 2010 – Mar 2011
£200,000	£100,000	NA

Total Institutional Contributions: 55.6%

Outline Project Description

The project will use the techniques of systematic innovation using the TRIZ methodology, to derive, select, implement and measure the effectiveness of a holistic set of solutions for managing down energy consumption in computing intensive learning and teaching spaces. The exemplar takes one site of the University, Deane, where there is: a high density of computer classrooms with high spec workstations; a small data centre; a large server farm and 200 academic and support staff. The site accounts for 46% of the total electricity usage at the University. The project aims to reduce the need for air conditioning in computer rooms and electricity consumption from ICT by developing a range of strategies and interventions: investing in infrastructure; adapting small scale monitoring and control technologies; and by engaging the whole Deane community in reduction measures through the live feedback of easily understood power usage information.

I have looked at the example FOI form at Appendix H and included an FOI form in the attached bid (Tick Box)	**YES** √	**NO**
I have read the Circular and associated Terms and Conditions of Grant at Appendix F (Tick Box)	**YES** √	**NO**

1 Introduction

1 Like all Universities, Bolton has experienced a 50% increase in energy bills over the last year and is anticipating an 100% increase in the coming year. Managing down energy usage is a business and ethical imperative. The University efforts, to date, have focused on the efficient use of space and resources, which culminates now with the closure of the Chadwick campus and consolidation onto one campus. Beyond small scale applications of green initiatives, ”Switch it Off” campaigns etc, the University has not had the resources to assess which green computing technologies and approaches would give the greatest benefit. Modest savings in one area are often wiped out by growth in consumption in another. Computer intensive disciplines continue to demand increasing processing power with consequent heat generation and increasing electricity consumption..

2 The ECCILES project aims to reduce the growing carbon footprint in computing intensive teaching and learning spaces. Using the Deane Site of the University’s Campus for the exemplar, the project will use the TRIZ Innovation methodology to derive and select a holistic set of solutions suitable for green computing in a 1960s building with a dense set of computing classrooms and server rooms.

3 The Deane site houses the School of Games, Computing and Creative, Technology, the School of Built Environment and Engineering, and the Bolton Business School. In total the Deane campus has 350 student workstations located in 14 computer rooms, specialist laboratories, a 120 machine server farm and a medium size data centre housing 36 servers including a SAN, and thin client clusters. Over recent years sections of the site have been refurbish and air conditioning has been retrofitted. However, the majority of computer teaching rooms are located in older areas, and due to the construction of the building temperatures regularly exceed 28°C. These rooms contain high end workstation used for computer games development, digital rendering, video and special effects work. There is considerable pressure from staff and students to install air-conditioning to achieve a more comfortable learning environment.

1.1 Our Vision for Reducing Energy Consumption

4 We believe that we will need to employ a range of strategies to realise meaningful improvements in energy saving at the Deane site and there is no “silver bullet” technology. The University has only limited capital to invest and needs to see a reasonable quick return to offset the rapidly escalating cost of power. It needs to make good choices of which tactics and strategies are likely to deliver.

5 The University is keen to investigate and trial free air cooling solutions as an alternative to air conditioning. Secondly, we would like to explore automated power control in laboratories via Ethernet based controllers; and investigating how human behaviours can be influenced through the provision of real time energy consumption information.

6 These are initial ideas which need further work to assess their true potential. There is also the possibility that the site has internal resources and environmental advantages that can be exploited. It is these that we believe the TRIZ methodology will help to examine and use.

7 The whole project will be underpinned by the collection of finer grained data on electricity usage using new power monitoring tools adapted for the purpose. Through the involvement of staff, student and expert academics, the project aims to engage the whole community at Deane in exploring, innovating and taking action to reduce ICT energy consumption whilst improving the learning environment.

1.2 Our challenge

8 The University has made a start to introduce some of the now more common techniques for reducing computer power including server virtualisation, thin client computing and wake- on-LAN for workstation upgrades. These techniques give modest savings in easy to control environments, but are harder to apply in others e.g. some software suppliers will not support virtualisation or thin client use.

9 TRIZ, provides a systematic method for deriving solutions to problems and has a number of core ideas: that someone, somewhere has already found a solution, maybe in a different context – these are encapsulated the TRIZ 40 inventive principles; the notion of "Ideality", of reducing the harm in systems; approaches to dealing with conflicting parameter e.g increasing power and temperature; the notion that there are predictable evolutionary trends in invention.

10 Energy reduction techniques and technology can often introduce a "harm" that undermines their potential; often practicality wins over energy efficiency. For example powering off a computer at the plug, limits the times at which security updates can be applied across a network, so workstations tend to be left on at the plug, if not in standby mode, when they still consume residual current. So, avoiding disruption to learning takes precedence over the energy that could be saved.

11 The University is currently using the TRIZ methodology with businesses to solve problems and develop new products through the new Innovation Factory based at Deane. The ECCILES project will use this expertise, together with the knowledge available to the University from its mechanical and electronic engineers, Estates, IT and business process staff (all based at Deane) to systematically generate and select a range of innovative solutions to reducing/controlling power and consumption and heat. It is anticipated that these may include small technical solutions e.g. Ethernet controlled room power switches, to influencing staff and student behaviour, to larger schemes reusing resources e.g. heat and free air management. The approach is expressed as a continuous cycle of innovation.

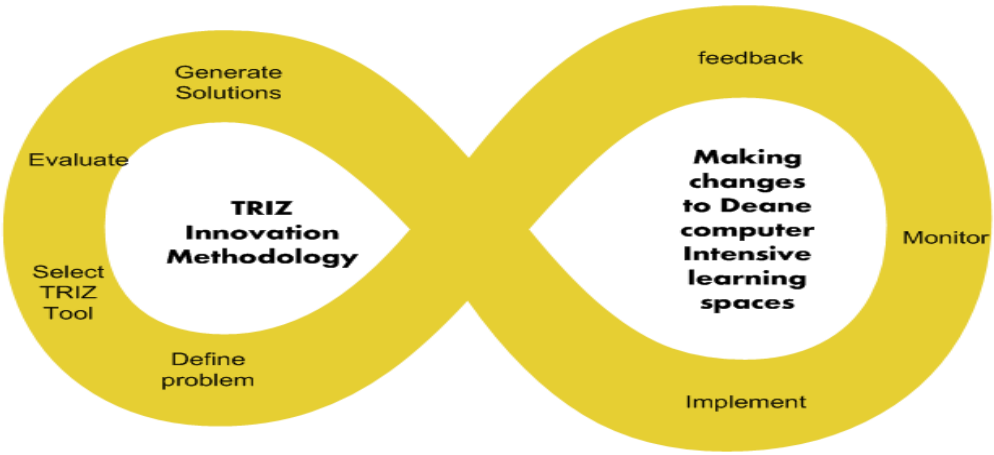

Figure 1 continuous cycle of Innovation and implementation

12 The project will use the skills of the University's micro electronics development unit to source and adapt power monitoring tools that can be applied to discrete local circuits such that live data can be collected. This will be used in two ways: to monitor improvements in consumption; to generate live information feeds via web services and widgets. These will be used to raise the awareness and influence staff and student behaviours. For example a widget may show the current cost of electricity being used in an area or the carbon profile at any one time.

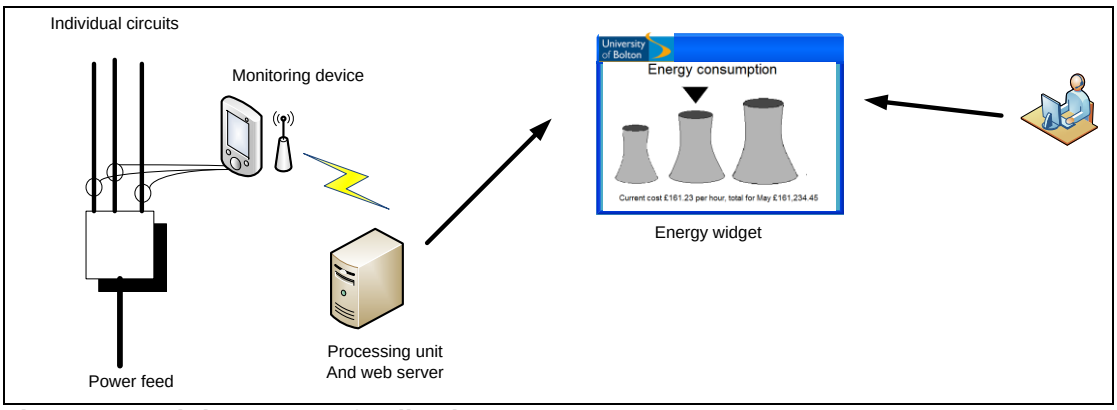

Figure 2 – real-time energy feedback system

13 Our JISC funded activity will deliver

- A portfolio of ICT energy reduction projects and actions derived using the TRIZ methodology
- An evaluation report on the viability of replacing air conditioning with free air cooling systems in computer intensive learning environments and buildings
- A report and evaluation on the outcome of each initiative taken
- Dissemination events on the use of TRIZ and systematic innovation methodology for problem solving around green computing
- A system for monitoring discrete local electrical circuits, transforming data into easily readable information formats made available using web services and widgets.
- Prototype control devices for reducing electricity consumption in computer labs, if these do not already exist.

2 Fit to Programme Objectives and Overall Value to the JISC Plan

14 With regard to the JISC call's vision, the project would address the following key areas:

JISC Priorities	ECCILES Project Outcomes
The importance of taking a holistic approach to environmental sustainability and the total environmental cost of ownership, and reducing the negative environmental impacts of education, research and institutional administration is fast becoming a key differentiator within the sector. Para A10	The use of TRIZ will enable and holistic evaluation of the solutions available to the organisation, some of which will be of a technical nature, some will be of a behavioural nature. The project plan will then focus on the solutions that match the JISC portfolio whilst the University will continue to support the application of those solutions which fall outside of the JISC scope, thereby optimising the efforts of the project and ensuring the widest possible coverage of solution application with limited resources.
The JISC-funded *Managing environmentally sustainable ICT in Further and Higher Education (SusteIT)* project has found that sustainability is not yet embedded in ICT decision making and makes recommendations as to the desirability of bringing together functions such as Estates and energy managers with the ICT management to allow a holistic view to be taken of the true cost of the ICT activities of institutions. Para A11	The project team brings together the functions of ICT management and Estates management to enable the two functions to work together in determining the route to be taken in designing and implementing the programme of solutions.
Projects should look for opportunities to share good practice and support the development of good practice where none exists, and support more sustainable behaviour - Para A12 and A18ii	At the moment there are a range of possible green computing actions. By using the TRIZ methodology we hope to be able to demonstrate ways of identifying and selecting solutions appropriate to a location and taking account of its

	environment and internal resources (a core concept in TRIZ).We believe that both the solutions we derive, the evaluation and the methodology will be of significant interest within the JISC community. Without wishing to prejudge the solutions that we will be focusing on, the change programme will be implemented across a reasonably large building and will give an opportunity to review good practice that has been adopted in other institutions eg Edinburgh and Cardiff, and share the experience via the AUA, AUDE, APVC of solution application to a broader range of accommodation
Effective planning for and use of future learning spaces and other estates assets - intelligent buildings – that is, buildings that are equipped to be easier to manage and that perhaps take note of usage patterns Para A14	The Deane Site represents a significant proportion of the campus containing approximately 1/3 of the teaching and learning accommodation. The project will, through monitoring and control techniques, directly improve the management and the environment of the ICT support and teaching rooms prevalent in this particular part of the campus, taking into account usage patterns etc.
Strategic understanding of ICT, and senior management buy-in. A18i	The project board is to be chaired by the Deputy Vice Chancellor, demonstrating the commitment of the senior management of the university to this change programme. The Vice Chancellor is committing £150k for infrastructure investment towards solutions derived by the project.
Cultural change - The integration of institutional systems will require traditional system 'owners' to change their role in order to deliver a component of an overall institutional system / service to stakeholders, and end-users' expectations and experiences also need to be taken into account to minimise the risk of developing technologically manageable, yet practically unusable, integrated systems. Para A18iii and Stakeholder involvement Para A19	The project will actively engage the whole Deane community in problem solving and in examining their own contribution to energy consumption assisted by the provision of real time information and awareness raising activities. This will assist with the implementation of energy reducing procurement policy etc. The project team incorporates a representatives from a diverse range of university academic schools and support units. They represent the "owners" of both the problems and the solutions and will bring to the project the stakeholder viewpoint of how implementation programme will best achieve user buy in and long term commitment. The project is not aiming to produce dry, ineffective, technological wizardry it is aiming to make changes which have a real and practical impact on the way the stakeholders view energy consumption.

3 Project Management

15 The project will adopt the principles of the Prince 2 project management methodology.

16 The project will be overseen by a **Project Management Board and Project Steering Group** chaired by the Deputy Vice Chancellor and Director of the School of the Built Environment and Engineering respectively. The Project Management Board will meet every 3 months or more frequently if it is deemed necessary especially at the project inception. The Project Steering Group will meet initially every six weeks and will report to the Project Management Board.

17 The proposed project team which incorporates a number of senior professional and academic members of staff, reflecting the strategic importance of this project, is as follows:

Project Team

18 Project Director
Project/Environmental and Sustainability Technical Manager
Senior Design Engineer
Researcher 1
Researcher 2
Programme Developer

19 The project team will have formal monthly meetings and will report to the project Steering Group.

20 The project is fully committed to working with the JISC support project, and will actively participate in programme activities as required by the call. All project team members will participate in relevant activities, depending on its nature.

4 Workflow and Work Plan

4.1 Workflow

21 It would not be appropriate for a project of this nature to be over-prescriptive in the specific developments to be undertaken. We intend to be flexible and adaptable to the findings of the exploration phase of the project. However, our main focus of reduction of energy in terms of control and monitoring techniques in conjunction with a number of practical solutions inevitably informs the work flow. Ultimately our aim is to share our experiences with other institutions as we feel that the processes we implement will be of interest and application across the sector.

4.2 Work Plan

22 The project plan has been structured into a number of work packages which reflect the primary areas of activity through the duration of the project.

23 **Work Package 1: With the use of TRIZ, review problem areas and areas of focused solutions.**
Objectives: To establish the project; familiarize key stakeholder with the TRIZ methodology and the problem area. To establish TRIZ work teams, agree objectives and undertake development/solution workshops.
Methodology: A number of Training workshops will be run in the Innovation Factory. These will be followed by facilitated group working on problem refinement and solution generation
Deliverable: report on the possible solutions identified

24 **Work Package 2: Identify solution strands**
Objectives: To select and assess the viability of proposed solutions
Methodology: put in place monitoring equipment and baseline energy consumption. Carry out small scale experimentation or other means to assess viability of solutions. Select the best bet solutions based on cost/benefit and efficacy.
Deliverable: Detailed requirements document identifying areas of change and supporting actions.

25 **Work Package 3: Planning**
Objectives: To establish each problem/solution area as a sub-project
Methodology: a project plan will be developed by the project team, led by the project manager, comprising a detailed timeline and method for each of the various solutions.
Deliverables: Individual project metrics and detailed implementation plans

26 **Work Package 4: Implementing**
Objectives: To model and were possible trial and evaluate the new processes in defined areas prior to full implementation .
Methodology: Piloting and evaluation will be a continuous process throughout the project.
Deliverables: Test completion reports

27 **Workpackage 5: Embedding the innovations, evaluate full implementation**
Objectives: To put in place full solutions or embed new processes and evaluate implantation making necessary adaptations as required, in particular to facilitate flexibility of application to a broader range of space configurations.
Methodology: Carry out implementation strategies and actively monitor improvement/degradation and problems that arise.

Deliverable: Evaluation reports on solutions

28 **Workpackage 6: Dissemination and collaboration.**
Objective: to work with JISC programme to disseminate lessons learnt and to learn from others, working with Support project.
Methodology: To collaborate fully with the JISC support programme, and to make available the lessons learnt through publications and workshops, project blogs and utilising professional networks including UCISA and Pro Vice Chancellors' forum
Deliverables: A project blog. A cluster of cases studies on a each solution deployed. A final evaluation report incorporating an assessment on the use of TRIZ in this area and recommendations for other seeking to implement similar innovations.

29 **Workpackage 7: Project management**
Objectives: to deliver a well run and successful project whose outcomes meet the strategic needs of the university, its staff, students and clients.
Methodology: This project combines research into practical solutions that TRIZ generates with action to implement new techniques and monitoring mechanisms that will permit more informed strategic decision making in terms of future actions to mitigate costs and carbon emission issues in the future. The timeline for such an ambition project will require that the management of the project is based on achieving the practical outputs as well as the shared knowledge that is an expectation.
Deliverables: Project reports (twice yearly), project plan (revised 6 monthly), reflective logs. Final project sign off report.

4.3 Timeline

30 Given the nature of this project, a detailed GANTT chart would not be appropriate. Further, the iterative nature of project phases and workplans imply that they will all run throughout the project, but varying in intensity. We offer the following diagram (figure 3) (increasingly popular in modern software development) as a description of the project timeline.

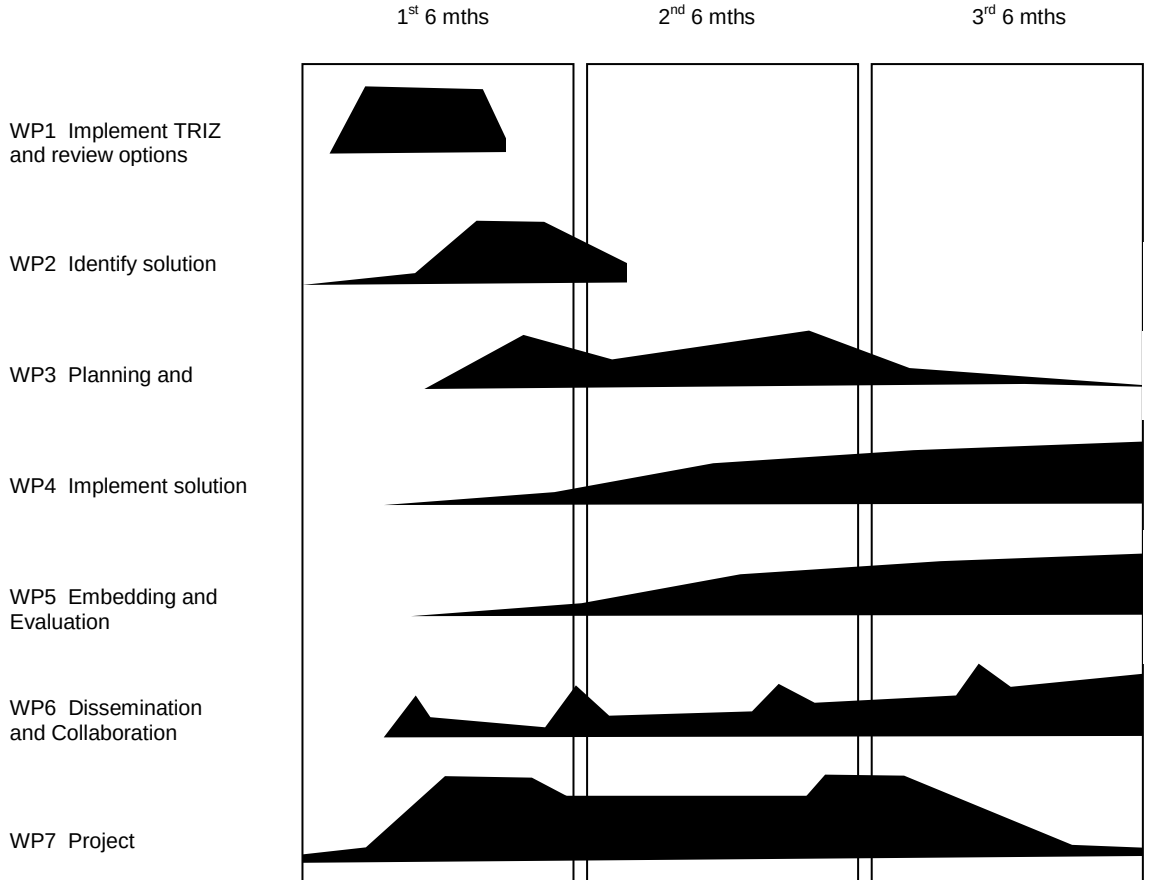

Figure 3 – Project Timeline

5 Quality Assurance

31 All aspects of the project will be signed off by the Project Manager and the Project Steering Group before publishing onto the website to ensure soundness of materials and maintenance of standards.

6 Accessibility

32 The project is working within the Open Source criteria as specified by JISC and the university acknowledges that transparency of outcomes is of paramount priority to the JISC community.

7 Risk Analysis

33 A detailed Risk Register will be prepared at the outset of the project and reviewed at each of the Project Management Board meetings. The main risks identified at this stage are as follows:

Period	Risk	Probability/ Impact	Mitigating Actions
2008 Start of project	Being able to employ Technical project manager with desirable skills mix	2/4	Use connections with professional bodies such as BSRIA and BRE
2008 Start of project	TRIZ may lead to solutions that are not strictly within the green computing arena and do not meet JISC criteria	1/1	University is committed to a change programme which will encapsulate the non technical solutions and direct these forward in line with University Strategy and policies
2008-9	Too much emphasis on academic research rather than practical application of solutions	2/4	Strong project management and direction from the Project Management Board and Steering Board to ensure the project achieves milestones
2008-9	Cost of solutions	3/3	Consider return on investment – whilst the university is to commit £150k over the duration of the project to facilitate the implementation of solutions, the University recognises that some of the solutions will require a long term commitment to change
	One solution taking precedence over others	2/3	Strong project management and direction from the Project Management Board and Steering Board to ensure the project achieves milestones
2009-10	Planning and Piloting Changes - Low engagement from staff	2/4	The project team and board represents a relatively significant number of academic schools and support departments to ensure that user commitment is spread across the university effectively.
2008-10	Complexity of programme and ensuring mission drift does not creep in	2/4	Strong project management and direction from the Project Management Board and Steering Board and accountability at executive level.

8 Engagement with the Community

34 It is key to the success of the project that the widest possible engagement across the university. The project initially encompasses the whole of the Deane site of the campus. The findings and chosen solutions will be transferable and will be introduced to the whole university. To facilitate the rolling out of the programme to the staff of the university to maximise buy in and inclusion we have included within the budget plan a significant sum to support extensive staff awareness programmes.

35 At a senior level, we are members of the Pro-Vice Chancellors network, and we will promote our work through this channel. We will also present our findings through other professional networks, including the AUDE, BSRIA , AUA, UCISA, SCONAL, though regional JISC RSC events and take an active part in JISC dissemination events.

36 We will work closely with the support project to identify the best ways in which we can collaborate with other working in this area, and participate in dissemination activities organised by the support project. We are keen to make our project deliverables part of any combined output that may be planned by the support project, that can help other universities to undertake the same developments as this project, and will work with the support project to make sure that they are in an appropriate format. We believe that this is the best way in which project deliverables can be sustained, other than the actual institutional changes, which we believe will result in a major transformation in the university's identity.

9 Value for money

37 The project breakdown which is found overleaf indicates a university contribution of approximately 55.6%. We can confirm that we are FEC compliant and have used this formula to ascertain our indirect costs. This project is part of a wider university change programme that is driven by organisational and sector change, the outcomes of which will continue to inform the sector via the ECCILES website.

10 Previous Experience of the Project Teams

38 Dr Peter Marsh, Deputy Vice Chancellor, University of Bolton: responsible for academic policy, learning and teaching; led and chaired project steering groups for HEFCE funded learning and teaching and widening participation projects; HE Academy funded projects and involved in the JISC funded MANSLE project; member of the HE Academy PVCs Special Interest Group on Employer – Led Learning; member of Greater Manchester Lifelong Learning Network Council; Project Reviewer for the Economic and Social Research Council.

39 Derek Rout, Project Director; Derek is the University's Head of Facilities. He joined the University a year ago having had a broad range of facilities management roles in the National Health Service, and the Universities of Hull and Leicestershire.

40 Patrick O'Reilly is Head of Information Systems and Technology. He is responsible for the managing the core IT resources including learning resources, MIS, networks and the central IT staff. Patrick is a member of the CETIS Enterprise SIG and is the project manager for the University's SHEiLab shibboleth implementation and BoXCRIp projects. Prior to this he was Head of Technology Services at Stockport College for 3 years; IT Services Manager at Stockport Council for 2 years. He has a Bachelors degree in Computer Science and is currently finishing a Masters in Information Systems and focusing of service oriented architecture in Higher Education.

41 Dr Margaret-Mary Nelson currently leads and co-ordinates research activities for the construction and property management and health and safety groups in the School of the Built Environment and Engineering, University of Bolton. She is Research Team Leader for the Inclusive and Sustainable Environments (IaSE) research group. She holds a first class BSc (Hons) degree in Property Development and Asset Management, a Postgraduate Certificate in Learning and Teaching in Higher Education, and a PhD from the University of Salford. Her PhD thesis was in Supply Chain Management in Facilities Management. She previously worked for a firm of Chartered Surveyors before embarking on further studies and an academic career. She has since managed and led several Facilities Management (FM) research projects with financial, public, retail, health and industrial sector organisations. Margaret was a Research Fellow at the University of Salford, and a Senior Lecturer and Researcher at the Facilities Management Graduate Centre, Sheffield Hallam University. She is a Fellow of the Higher Education Academy (FHEA) (formerly Institute for Learning and Teaching in Higher Education), and Member of the British Institute of Facilities Management (MBIFM).

42 Michael Lawrence is a Design Engineer in the University's Technology Development Centre where he offers technical expertise, support and advice to industry covering a broad range of realisable microelectronic applications, frequently involving microcontroller applications. He both tutors and delivers the University's Microcontrollers Masters Module on the Distance Learning "Advanced Microelectronics for Industrialists" MSc over the web, tackling both hardware and software elements. With a 1st class Hons. degree in Mechanical Engineering and a Pg.Cert. in Electronic Systems Engineering, his background covers a broad range of

experience from mechanical engineering, microelectronics design through to project management. Mike is often the first point of contact for companies looking for partnership or consultancy opportunities in research and development. He has followed numerous projects through from concept idea, through to working prototype, via initial specification, design optimisation and practical testing. His development interests are mainly within the field of microcontrollers.

43 Professor Danny Morton is professor of Engineering and Innovation Systems at the University of Bolton with over 30 years experience in Higher Education. He was previously Director of Academic Enterprise at the University with a responsibility for all externally funded project activities. Has extensive research background with numerous publications and PhD supervisions including work associated with enterprise resource planning systems. Acted as QAA Auditor and Reviewer. Danny is the driving force behind the use o TRIZ at the University and works extensively companies and businesses in using the methodology.

44 Mark Williamson is the university's Networks and Development Manager and is responsible for deployment of new technologies and the management of existing Voice and Data networks as well as central systems such as e-mail and file store. Mark has over 20 years experience in the design and implementation of information technology and data networking systems.

45 Roger Kirkman is Systems Administrator in the School of GCCT and supports the departments teaching and learning computing systems including the UNIX and Citrix based systems. Prior to joining the University Roger worked in the electrical generation industry and as an electrical engineer on nuclear submarines.

46 Hilary Birtwistle is Head of Business Strategy and Policy Support and is responsible for the development of systems and processes which span the operations of the organisation in terms of streamlining the organisations business processes. In the recent past Hilary was head of the central academic administration unit and has an understanding of the lifecycles of many of the organisational processes. Hilary has had responsibility for accommodation developments in her previous role of Faculty Manager (Faculty of Arts, Science and Education, and Faculty of Technology) when she also had responsibility for timetabling. Hilary has an MBA and is a member of the Chartered Management Institute.

11 Contributing to the e-Framework

47 Where the project develops reusable web services or parts capable of contributing to the development of the e-framework, full account will be taken of using standards based approaches to facilitate reuse. Where necessary, advice will be sought through the CETIS Enterprise SIG community to ensure we can maximise the re-usage of components.

12 Freedom of Information (FOI) and Intellectual Property Rights (IPR)

48 The University confirms that the project is delivered in support of the open source ethos and sector development and as such there are no issues that relate to FOI or IPR.
Please see Appendix A

13 JISC Project Plan Budget

Directly Incurred Staff	**Sept 08 - July 09**	**August 09 – February 10**		**TOTAL £**
Project Director 0.4fte Senior Manager 45k pa net	21,160	13,857		35,017
Project Manager 1fte 37k pa net	43,489	28,480		71,969
Senior Design Engineer 0.4fte 36k pa net	14,974	9,848		24,822
TRIZ developer 0.2fte 45k pa net	10,576	6,928		17,504
Applications Manager 0.2fte 36k pa net	7,519	4,923		12,442
Programme Developer 0.5fte 31k pa net	14,684	9,617		24,301
Total Directly Incurred Staff (A)	112,402	73,653		186,055
Non-Staff				
Travel and expenses	2,000	2,000		4,000
Hardware/software/monitoring equipment	36,598	11,402		48,000
Dissemination	2,000	2,000		4,00
Evaluation	5,000	2,500		7,500
Other Bursaries	30,000	15,000		45,000
Consummables	2,000	1,000		3,000
Estates infrastructure	75,000	75,000		150,000
Professional Services	10,000	5,000		15,000
Total Directly Incurred Non-Staff (B)	162,598	113,902		276,500
Directly Incurred Total (A+B=C) (C)	275,000	187,555		462,555
Directly Allocated				
Staff (administrator, steering group and advisory group)	10,000	5,000		15,000
Staff Development Events	10,000	5,000		15,000
Directly Allocated Total (D)	20,000	10,000		30,000
Indirect Costs (E)	112,000	71,273		183,273
Total Project Cost (C+D+E)	407,000	268,828		675828
Amount Requested from JISC	200,000	100,000		300,000
Institutional Contribution	207,000	168,828		375,828
Percentage Contributions over the life of the project	**JISC 44.4%**	**UNIVERSITY 55.6%**		**Total 100%**

Nature of Institutional Contributions

Directly Incurred Staff				
Post, Grade & % FTE See above	0	0		0
Directly Incurred Non Staff				
Hardware/Software etc.	75,000	87,555		162,555
Directly Allocated				
Staff, Estates etc.	20,000	10,000		30,000
Indirect Costs				
Indirect Costs	112,000	71,273		183,273
Total Institutional Contributions	207,000	168,828		375,828

APPENDIX A

FOI Withheld Information Form

We would like JISC to consider withholding the following sections or paragraphs from disclosure, should the contents of this proposal be requested under the Freedom of Information Act, or if we are successful in our bid for funding and our project proposal is made available on JISC's website.

We acknowledge that the FOI Withheld Information Form is of indicative value only and that JISC may nevertheless be obliged to disclose this information in accordance with the requirements of the Act. We acknowledge that the final decision on disclosure rests with JISC.

Section / Paragraph No.	Relevant exemption from disclosure under FOI	Justification
WE CAN CONFIRM THAT NO PART OF THE PROJECT IS SUBJECT TO EXEMPTION UNDER THE FREEDOM OF INFORMATION ACT		