

<b>Cover Sheet for Proposals</b> (All sections must be completed)	<b>JISC Capital Programme</b>
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**Name of Capital Programme:** e-Learning

**Name of Lead Institution:** University of East London

**Name of Proposed Project:** E Learning for Construction Managers

**Name of Project Partners:** Glasgow Metropolitan College, UHI Millennium Institute, North Highland College, Moray College, Lewisham College, CITB-Construction Skills

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**Length of Project:** 2 years 3 months

**Project Start and End Dates:** September 2006 – December 2008

**Total Funding Requested from JISC:** £199,000

**Funding Broken Down over Project Years:**  
September 2006 - March 2007: £50,000  
April 2007- March 2008: £99,000  
April 2008 – December 2008: £50,000

**Total Institutional Contributions:** £100,000 in kind plus an anticipated cash contribution of £100,000 from CITB-Construction Skills in 2007

**Outline Project Description**  
The principal goal for this collaborative project is to develop and deliver a comprehensive innovative and exciting programme of e learning material at Higher Education level to meet the learning needs of existing managers in construction and those individuals who are able to become, or aspire to become, construction managers (including people from previously under represented groups e.g. women and people from ethnic minorities).  
In achieving this goal the project will:

- Transform learning and teaching in HE construction courses
- Inculcate lifelong learning habits in HE construction learners
- Encourage teachers to assist their students to take more control of their own learning and develop and fulfil personal learning targets
- Meet the local and national skills needs of the construction industry for more project and other construction managers especially in large construction projects related to the Olympics and the Thames Gateway Development
- Share good practice and build capacity in e learning development and delivery across institutions throughout the UK.

The project is strongly supported by the Sector Skills Council, CITB - Construction Skills and builds on the current E Construction Transformation Project, led by Scottish FE Colleges, which is developing e learning at construction craft levels. It will also feed into the Thames Gateway Lifelong Learning Network.

<b>I have read the Circular and associated Terms and Conditions of Grant at Appendix B (Tick Box)</b>	<b>YES</b> √	<b>NO</b>
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## **E Learning for Construction Managers**

### **1 Introduction**

#### 1.1 Time frame and Project Management

The project will start in September/October 2006 and complete in December 2008. It will adopt the JISC project management format throughout the life of the project and will seek to cooperate with JISC and the JISC community during the project and after it completes.

#### 1.2 Project deliverables

Project deliverables include:

- E learning content for construction project management learning for use in HE and in the workplace
- Ensuring universal access to that content through interoperability capabilities
- Transforming the way construction management learning is delivered initially in the partner institutions and subsequently throughout UK HE
- Trialling the use of mobile technology on construction sites for e learning purposes
- Increasing the capacity of the partner and other institutions.
- Securing additional funding from CITB-Construction Skills

These outputs will fit in with JISC's strategic aims and match the programme's funding criteria.

#### 1.3 A project with a difference

We believe that our project is very different from many e learning projects in that:

- Our partnership of HE and FE institutions has a geographical span across almost the whole of the UK – it will be sharing good practice from Thurso in the very north of Scotland to East London, here in the south east and will communicate mostly through ICT.
- The project has close links to industry, employers and employees and the workplace through our partner, Sector Skills Council CITB-Construction Skills and through links with the successful Scottish e learning initiative Learn Direct and Build – it will address the problem of the major skills shortage of construction managers that is causing such problems for Olympics and Thames Gateway construction projects here and new town developments and Commonwealth Games bids in Scotland. If the bid is successful, CITB- Construction Skills will contribute additional funding to the project through its Management Development Fund.
- Through increasing the pool of competent and skilled construction managers, the project will support sustainability and business growth in companies of all sizes, including main and sub contractors.
- In the same way, by up-skilling the existing construction management workforce and by increasing the number of highly competent construction managers the project will help to combat the existing very poor health and safety record in the UK construction industry.
- In meeting some of the local and national needs of the construction industry, the project will demonstrate excellent value for money, as it will have a real and beneficial impact on the UK economy, out of all proportion to the initial investment. It will also provide cost effective learning solutions to benefit FE and HE institutions throughout the UK.
- It will further government's social inclusion agenda by creating new opportunities for career entrance and progression and by encouraging construction workers with FE qualifications to progress to HE – in particular it will meet the learning needs of existing managers in construction and those individuals who are able to become, or aspire to become, construction managers, including people from previously under represented groups e.g. women and people from ethnic minorities.
- The project will also further UK Lifelong Learning agendas by encouraging the habit of learning to develop in employees and new entrants to an industry which until now has not been strongly associated with lifelong learning and continuing professional

development – additionally it will feed into the Thames Gateway Lifelong Learning Network.

- It will transform learning for existing HE construction management qualifications into world class provision capable world class delivery and of being exported to other countries and it will also help to support and consolidate UEL's new Foundation Degree in Construction Management and a new BSc degree in Construction at the UHI Millennium Institute, thus building increased national and institutional capacity.
- It will be modelled on the larger E Construction Transformation Project (ECTP), one of six e learning projects in the SFC funded E Learning Transformation Programme which is managed by JISC - in developing a full range of e learning to support Construction Craft Modern Apprenticeships, ECTP is transforming construction learning and teaching at FE level and the new project will be a major step forward in starting the transformation of HE Construction learning across the UK. JISC has been most helpful in supporting this project and the new project team anticipates working very closely with JISC in the course of the new project as well as depositing the new learning content into JORUM and making it freely available to the FE and HE communities throughout the UK.

#### 1.4 UK-wide connections

There are compelling reasons for creating such a broad strategic project partnership between HE and FE institutions and industry in England and Scotland. For example there are many similarities between Glasgow and East London including the need to grow the local economies, create jobs, further social inclusion and encourage lifelong learning as well as a specific need for more skilled managers of for many large construction projects related to the Olympics and the Thames Gateway Development and to Glasgow's Commonwealth Games bid. In the Scottish Highlands there are corresponding needs to create jobs and support sustainability and business growth as well as specific needs associated with nuclear decommissioning and the building of a new town near Inverness which itself is expanding rapidly. UEL and our partners believe it is very appropriate that we should work together to enhance the delivery of construction learning in HE and increase its capacity by extending and adapting the Scottish FE ECTP project to HE. Too often good practice developed in one of the home nations is not shared across the whole UK. Furthermore, the geographical distance between the project partners will necessitate the embedding of electronic communication systems and encourage innovation and development in this respect. Developing best practice between institutions and across such a widely dispersed partnership will benefit both the partner institutions and the wider JISC community as will the wide accessibility of the project's deliverables through the JORUM repository.

#### 1.5 Project Partners

The Project Partners are UEL, Glasgow Metropolitan College, UHI Millennium Institute, North Highland College UHI, Moray College UHI and Lewisham College. The partners will sign a consortium agreement and a draft of this document is given in Appendix 10

##### 1.5.1 The University of East London (UEL)

UEL is the lead partner in this bid. It is a dynamic university at the cutting edge of cultural and technological change. It is developing programmes of learning, teaching and research that are practical, innovative and relevant, meeting the needs of students and industry alike. Now recognised as one of the UK's leading modern universities, with researchers engaged in work of national and international importance across a wide range of disciplines, according to the results of the most recent government research assessment exercise, UEL is among the top ten post-1992 universities in the UK for research. With over 19,500 students from more than 110 countries, UEL is now a global community with strong local ties. The university contributed to the London 2012 bid, is a partner in the development of Olympics and legacy infrastructure, and in the development of the proposed London Olympic Institute. UEL has already established strong links with the partner institutions of this bid and will look to initiate, promote and disseminate further research and development projects with these partners over the coming years. It is now a member of the Glasgow based Learn Direct and Build Strategic E Learning Forum and is developing a Foundation Degree in Construction Management that

will utilise the e learning content that is to be an output from this project. The University has made significant advances towards managed learning and embedding our VLE in mainstream processes and learning activities. Our new student portal is called UELDirect. On campus, students have 24-hour access to state-of-the-art IT facilities, libraries and e learning centres.

#### 1.5.2 Glasgow Metropolitan College (GMC)

GMC was formed in 2005 after the merger of Glasgow College of Building and Printing and Glasgow College of Food Technology, both colleges with international reputations in their respective fields. GMC is Scotland's biggest college with over 20,000 students and over 500 staff. All GMC's courses are developed with industry. Over 90% of its students go on to HE or get jobs. GMC has 2,600 HE students of its own but it also teaches 1,000 BSc Construction undergraduates from Glasgow Caledonian University. GMC is the lead college partner in Scotland's Learn Direct and Build (LD&B) e learning initiative. The LD&B office is based in the college, which is in the heart of the city centre. The principal, Professor Tom Wilson is Chair of LD&B and will play an active role in this project as Assistant Project Director, whilst Jenny Kellie of LD&B will be the Project Manager.

#### 1.5.3 North Highland College UHI (NHC)

NHC is based in Thurso and Wick in Caithness and Dornoch and Alness in Ross and Cromarty and largely serves a scattered rural and island community. It is a constituent member of the UHI Millennium Institute and has both FE and HE students. The college has long been a leader in the development and delivery of e learning and houses a renowned unit specifically dedicated to the development and delivery of e learning. NHC is the preferred College developer of LD&B e learning projects. The NHC Depute Principal, Donald MacBeath will sit on the Project Management Group of this project.

#### 1.5.4 Moray College

Moray College is another of the UHI colleges and is based in Elgin and Forres in Morayshire. Like NHC, Moray College has both HE and FE students. Moray College leads the E Construction Transformation Project and Assistant Principal John Ellwood will sit on the Project Management Group of this project.

#### 1.5.5 UHI Millennium Institute (UHI)

UHI is a Higher Education institution with 13 constituent colleges and research institutions throughout the highlands and Islands and in Perth and Morayshire. It anticipates being granted true university status in 2007. UHI has been running university level courses for many years and these come under the scrutiny of QAA. It is currently developing a new BSc course in Construction that will use the e learning output from this project. Dr Paddy Maher, Dean of Science and Technology will sit on the Project Management Group of the project.

#### 1.5.6 Lewisham College London

Lewisham College London has 16,000 students, 3,600 course and 2 large campuses and 2 Centres of Vocational Excellence, of which ICT is one. A recent Ofsted report remarked on its vibrancy and good governance, saying that it was outstanding and one of the UK's leading colleges. The Principal, Dame Ruth Silver, will appoint a representative to sit on the Project Management Group of this project.

#### 1.5.7 CITB-Construction Skills

CITB-Construction Skills is the Sector Skills Council for Construction. As such, it is charged by government for developing national occupational standards and with responsibility for sectoral workforce development in order to assist all companies in its sector to become more competitive. This involves working with large companies, small and medium enterprises and micro-businesses in gathering labour market intelligence, identifying current and future skills shortages, encouraging equal gender opportunities and developing and implementing strategies for solving identified problems. CITB-Construction Skills is also one of the two remaining statutory training bodies with a responsibility for raising an industry levy from in-scope employers which it then redistributes along with other funds for workforce development. As the SSC, it plays an important role in the implementation of government education, training

and lifelong learning policies. The SSC's areas of responsibility include developing leadership, management and supervisory skills in addition to the technical skills specific to its sector. It is also concerned to support the implementation of equal opportunities towards creating social inclusion. It opened an Olympics Office, located near UEL and it is greatly concerned about the shortage of qualified large project managers for Olympics and Thames Gateway projects. It is in response to that concern that UEL is developing its new construction degree. If this bid to JISC is successful CITB-Construction Skills has promised to look very favourably at contributing further funding to this project. In the past it has funded many LD&B projects and it was a founder member of the initiative. Graeme Ogilvy, Scottish Manager and Depute Chair of Learn Direct and Build will sit on the Project Management Group of this project.

#### 1.6 The Construction Sector

The Construction Sector is one of the main industries in the UK and is currently booming:

- There are Labour and skills shortages at every level of the workforce.
- Three-quarters of construction companies of all sizes have identifiable skills gaps in management and supervisory and business development skills.
- A large percentage of management and technical staff previously worked in craft or operative occupations but more than a quarter of all management and technical staff do not have any formal qualifications for their current posts and have not had the benefit of any supervisory or management training.
- Half the site supervisors have progressed from craft or operative jobs without gaining additional qualifications and have not had the benefit of supervisory or management training.
- There is a need to identify routes that can be used by SMEs and large companies to progress managers and supervisors through appropriate training and qualifications and provide learning provision for these routes.
- The industry needs more qualified managers and supervisors and the current amount of management and supervisory, and business development training delivered is not adequate to meet the identified needs.
- E and blended learning can provide some solutions to these problems.
- Small companies in particular have urgent needs for up-skilling supervisors and managers.
- Sole operators who manage their businesses whilst still working on the tools have an even greater need to acquire the requisite business skills to ensure their survival and encourage their business growth.
- Large companies who operate as main contractors have a pressing need for project managers, particularly in relation to Olympics related and other large projects such as the Thames Gateway Development. Research reports recommended that FE and HE construction departments should access or develop distance and on-line learning options for construction management and offer or facilitate ICT training.

#### 1.7 Learn Direct and Build Initiative (LD&B)

LD&B is a major e learning initiative for the construction industry that started in Scotland and is gaining wide renown. The E Construction Transformation Project is one of its current major projects. More details can be found in Appendix 2 and at [www.learndirectandbuild.com](http://www.learndirectandbuild.com) as evidence of our ability to deliver this project.

#### 1.8 E Construction Transformation Project (ECTP)

ECTP is one of six e learning projects in the SFC funded E Learning Transformation Programme that is managed by JISC (by Lou McGill and Sarah Knight). It is using its £900k funding to develop a full range of e learning to support Construction Craft Modern Apprenticeships, ECTP is transforming construction learning and teaching at FE level and the new project will be a major step forward in starting the transformation of HE construction learning across the UK. The same project management and development methodology that has been tried, tested and evaluated by ECTP will be used and adapted for this project. In particular the use of a combination of college developers and commercial games technologists that has proved so successful with ECTP will be adopted again for this project.

Papers relating to ECPT are appended to this bid (Appendices 3 to 9) as evidence of our ability to deliver this project. More information on ECPT can be found on the project's web site at <http://online.nhcsotland.com/econstruction>. At present this is available to JISC, SFC and the project team and management group only.

## **2 Project Description**

### **2.1 Main Aim**

The principal goal for this collaborative project is to develop and deliver a comprehensive innovative and exciting programme of e learning material at Higher Education level to meet the learning needs of existing managers in construction and those individuals who are able to become, or aspire to become, construction project managers (including people from previously under represented groups e.g. women and people from ethnic minorities). In achieving this goal the project will:

- Transform learning and teaching in HE construction programmes
- Inculcate lifelong learning habits in HE construction learners by encouraging learners to set personal lifelong learning, professional development and career progression goals
- Encourage teachers to assist their students to take more control of their own learning and develop and fulfil personal learning targets
- Meet the local and national skills needs of the construction industry for more project and other construction managers including the urgent skills needs in East London relating to the Olympics and the Thames Gateway Development
- Share good practice and build capacity in e learning development and delivery across institutions throughout the UK.

The project is strongly supported by the Sector Skills Council, CITB- Construction Skills and builds on the current SFC funded E Construction Transformation Project (ECPT), led by Scottish FE Colleges, which is developing e learning at construction craft levels.

### **2.2 Fit with JISC Strategic Aims**

The project is a good fit with the aims enumerated in the JISC Strategy 2004-2006

*Aim 1 To develop solutions that help enable the UK education and research communities' activities world class through the innovative use of ICT.*

The project:

- Will major on developing engaging, innovative e learning materials using games technology and virtual worlds such as the virtual construction site and city
- Will develop effective and innovative intra-project communications to combat possible problems caused by geography
- Will test the use of mobile technology to deliver e learning directly on to construction sites

*Aim 2 Advice to institutions to enable them to make economic, efficient, compliant use of ICT, respecting the individuals and corporate rights.*

The project will:

- Produce high quality reports, project papers and good practice case studies that can be distributed by JISC throughout the JISC community

*Aim 3 Help the sector to provide positive personalised user learning experiences --- progression*

The project will:

- Assist HE teachers to use the project material allow flexible delivery and to tailor personal learning and assessment programmes for their students based on the learners personal learning techniques and strategies to facilitate knowledge acquisition and skills development leading to academic and career progression.

*Aim 4 Develop mutually advantageous partnerships with organisations in the UK.*

The project will:

- Open up its own strategic partnerships related to Learn Direct and Build and other initiatives to JISC and its community across FE and HE and with external partners and the construction industry.

*Aim 5 Advise, inform and help implement the strategies of government, funding and research councils.*

The project will:

- Further the social inclusion and lifelong agendas by providing engaging high quality e learning that will encourage under represented social groups to opt for further and higher education that will offer good job prospects and career progression in the construction industry.

The project will also:

- Help its own and other institutions to make, embed and keep their e learning activities world class
- Adhere to JISC project management guidelines and meet deadlines for submission of project plans and reports etc
- Develop high quality digitised resources
- Build capacity, knowledge and skills in the use of e learning.

### 2.3 Fit with JISC Criteria for Involvement

The project meets the criteria for JISC involvement in that the activity:

- Is technology based
- Will produce UK wide benefits and adds value beyond that which individual institutions could
- Would be unlikely to happen without JISC funding although paradoxically the JISC funding will allow extra funds to be levered from other partners

### 2.4 Project deliverables

Project deliverables will include:

- E learning content for construction project management learning for use in HE and in the workplace
- Ensuring universal access to that content through interoperability capabilities
- Transforming the way construction management learning is delivered initially in the partner institutions and subsequently throughout UK HE
- Trialling the use of mobile technology on construction sites for e learning purposes
- Increasing the capacity of the partner and other institutions.
- Securing additional funding from and dissemination to CITB-Construction Skills
- Pilots demonstrating the use of e-learning to support cross-institutional delivery of lifelong learning.
- Interim and evaluation reports analysing areas in which the project has been more and less successful, highlighting the implications and challenges of implementing e-learning to support cross-institutional delivery of lifelong learning.
- Collection of baseline data and subsequent evaluation of learners' experiences of using the technology, and of its influence on learning.
- Transferable models of the use of e-learning to support cross-institutional delivery of lifelong learning.
- Case studies and scenarios analysing user needs and user interactions with learning material and delivery systems.
- Dissemination to the sector, construction industry and lifelong learners.

### 2.5 Access

The project will produce a fully accessible digital collection of e learning material that will wherever possible be deposited in JORUM and also accessed the project and LD&B websites. It is intended that access to both the metadata and the materials will be open to the higher and further education communities and potentially to the wider public including employers and employees in the construction industry.

### 2.6 Standards

Common standards will be used throughout the project by all partners. A scoping exercise at the beginning will be used to determine the best solutions for both preservation, change of purpose and access. The project standards will be in sympathy with both the JISC Information Environment and the MINERVA Digitisation guidelines. The project will strive to achieve interoperability across all VLEs in use in HE and FE

### 2.7 Quality Assurance

The project will adopt a holistic approach to quality assurance, involving the whole project team in a continual effort to ensure that the digital objects, metadata and contextual information are of the highest quality. Random sample rates will be applied to the created objects and metadata, and the metadata creation and cataloguing will involve viewing and checking every image. These processes will be incorporated into a robust quality assurance framework to be fully developed once project funding is secured.

### 2.8 Intellectual Property

From the experience in delivering ECTP we know that there will be issues and problems relating to the paper based teaching material that will be used to create e learning materials. It will be the responsibility of the Project Manager to ascertain where copyright still remains and to achieve agreement from any copyright holders.

### 2.9 Sustainability of the Project and its Exit Strategy

The sustainability of the project and a satisfactory exit strategy will be ensured through its association with Learn Direct and Build which will take over responsibility for updating e learning materials etc.

### 2.10 Review and revise

Throughout the project, regular continual reviews will be undertaken not only to monitor the progress of the project but also to the state of the environment in which it is set (i.e. industry, learner and tutor needs) and the latest technological and pedagogical developments in order to ensure that the work remains both relevant and necessary and that the quality of output remains consistently high. To help this process:

### 2.11 Risk Analysis

\* 1 is low, 5 is high

Risk	Probability (1-5)*	Severity (1-5)*	Score (P x S)	Action to Prevent or Manage
Staff leaving, promoted not available, off sick/maternity leave or proving incompetent	2	3	6	Maximum 6-month qualifying period enforced. Deputise, replace, train incoming staff, second from other LD&B 2 projects. Enforcement of provider contracts that cover input and personnel replacement
PMG, Working Group members leaving	1	3	3	Replace from list of substitutes
Inter Organisational lack of support	1	2	2	Produce and monitor a Memorandum of Agreement
Changes in national policy in the life of the project	2	2	4	Monitor closely and adjust plan where necessary
Technical Equipment breaking down, stolen	1	2	2	Insure, replace
Technical support and development inadequate	1	1	1	Discharge current and buy in new expertise
Loss of project data	1	3	3	Enforce adequate back-up and digital storage systems
Development slippage	1	1	1	Monitor outputs closely and take remedial action by increasing staffing, redistributing responsibilities etc
Legal; risk of litigation, industrial tribunals	1	1	1	Provide watertight contracts for staff and providers and follow standard HR procedures
Fraud	1	1	1	Monitor budgets closely, have spend limits and extra authorisation requirements
Loss of project accommodation e.g. through fire or flooding	1	2	2	Replacement accommodation will be made available by GMC at an alternative campus if necessary
Business failure by commercial developers	1	2	2	Will only be paid on satisfactory completion of units and the storage of these in the digital repository. Other companies could take the work on.
Low uptake	1	1	1	Promote and disseminate effectively

### 2.11 Critical success factors

The following factors are critical to the overall success of the project:

- Effective collaboration between project partners
- Transformation of Learning and Teaching Process, particularly in the adaptation of the approach used by Tutors
- Acceptance/recognition of the value of the new arrangements by students, teachers and by employers
- Production of quality assured e-learning packages on time and within budget
- The high pedagogical quality of all project products and their accessibility and interoperability and their success in supporting HN and Degree provision
- Sustainability of the products and practices after the lifetime of the project

### 2.12 Evaluation Strategy

The Expert Advisory Group (EAG) and the Project Management Group (PMG) will take responsibility for monitoring the progress of the project. Clear mechanisms for monitoring and evaluation will be established, at all levels EAG and PMG will ensure that the project has clear plans, with objectives, timescales and targets that are understood by everyone. The PMG will also ensure financial monitoring, and annual audit via the internal audit system within the financial lead institution. We will appoint an Evaluator at the beginning of the programme and a formal evaluation will take place every six months, and a report produced, which will include a financial report. In the last quarter of the project, we will commission an in-depth independent evaluation of the first three years of operation

### 2.13 Work Packages, Milestones and Timeline

Each package will be identified by name and the schedule will show the following:

- The objective of the package and a list of the major development tasks
- Earliest start date for each task, latest completion date for each task and person responsible for each task
- A list of the outputs and milestones

Gantt charts will be produced for installation on the project web site and will identify the work schedules and milestones for each of the project groups.

Phase	WP	Title	Objective	Start	End
1	1	Set Up Project	To plan the project in detail, including developing and allocating work packages, appointing project team and steering group	Sept 06	Dec 06
	2	Research	To undertake research to ensure effectiveness of the project in terms of development and delivery.	Jan 07	Mar 07
	3	Staff Development	Ensure that those involved with the project are equipped with the necessary skills to develop e packages	Sept 06	May 07
2	4	Design Packages	To develop a future proof standards compliant design for the e packages in the built environment	Jan 07	April 07
	5	Develop Phase 1 E Packages	To develop future proof standards compliant e packages for the built environment specified areas	May 2007	Dec 2007
	6	Test Phase 1	To ensure usability and suitability of e packages.	Jan 08	Feb 08
	7	Develop Website	To develop and populate a website to promote the project and to provide a communication forum for the core project team	Sept 06	Dec 08
	8	Develop and test	To develop a managed learning environment to provide access and management of learning tracking and user	Jan 08	Apr 08
	9	Develop Virtual Building Site	To develop the Virtual Building Site for further curriculum areas i.e. Painting and decorating	Oct 06	Mar 08
3	10	Develop Phase 2 E Packages	To develop further future proof standards compliant e packages for the built environment specified areas	Mar 08	Oct 08
	11	Test Phase 2	To ensure usability and suitability of e packages.	Oct 08	Nov 08
	12	Dissemination	To disseminate project in training and education communities	Jan 08	Dec 08
	13	Implementation	To implement e packages in training and education communities	Nov 07	Dec 08
	14	Evaluation	To evaluate the success of the transformation project	Sep 07	Dec 08

Ongoing	15	Project Management	To manage the project to ensure that objectives and outputs are met/achieved within budget and to set timescales and deadline. To ensure that requirements of evaluators are met.	Sept 2006	Dec 2008
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#### 2.14 Quality Plan

The implementation of the quality plan will be the responsibility of the Quality Assurance Group particularly in relation to compliance with JISC Technical Standards, use of best practice and fitness for purpose. Criteria and sources of evidence for these assessments will be determined by the Quality Assurance Group, which will formulate the quality plan.

#### 2.15 Dissemination

Our dissemination strategy is to have an impact not only on the HE sector, but also on the construction industry itself and on lifelong learners themselves in this important area. Our e-learning materials will be trialled in East London and Glasgow through our partner universities, colleges and consortia, including Learn Direct and Build, before being made available to the sector at large and through Jorum. Other dissemination activities include a project website with access to all project papers, papers published by project leaders in both scholarly and construction journals, and presentations by project leaders at national conferences concerned with e-learning and construction. We will also disseminate our findings to employers through CITB–Construction Skills.

### 3 Budget

ITEM	JISC	IN KIND
Project Direction	£10,000	£10,000
Project Management	£40,000	
Project Officers	£30,000	
Project Administration (In Kind)		£5,000
Project ICT Support (In Kind)		£10,000
Initial development of e learning packs (NHC)	£20,000	
Development of Virtual Worlds, Games Technology	£62,000	
Subject experts/authors	£15,000	
Evaluation	£4,000	
Office Accommodation (In Kind)		£20,000
Office Services (In Kind)		£5,000
Capital equipment (In Kind)		£50,000
Office supplies (In Kind)		£5,000
Travel and subsistence	£10,000	
Transformation Training	£4,000	
Dissemination and Promotion	£4,000	
<b>TOTAL</b>	<b>£199,000</b>	<b>£105,000</b>

### 4 Key Personnel

#### 4.1 Project Director

Professor Andrew McDonald FCLIP, Director of Library and Learning Services and Head of Lifelong Learning Centres, UEL will be Project Director with a brief to oversee the project: he will be ultimately responsible for project delivery and will chair an Expert Advisory Group. Professor McDonald has held senior positions at UEL, Sunderland and Newcastle, He is highly influential within the institution and beyond, and has an excellent track record in attracting research funding and in delivering projects, including ICT strategy and digital library and learning projects.

#### 4.2 Assistant Project Director

Professor Tom Wilson OBE, BSC, CEng, MBCS, FRSA Principal, Glasgow Metropolitan College and Chair of LD&B will chair the Project Management Group. Professor Wilson was Chair of the Glasgow TELE Colleges Group, Chair of the Scottish Council of Educational Technology and until March 2006 he was Chair of Learning and Teaching Scotland. Professor Wilson was a member of the Digital Scotland Task Force and is a member of the Scottish Construction Forum

**4.3 Project Manager**

Jenny Kellie MA, Dip Ed will be Project Manager. She is currently Projects Director, LD&B and Project Director ECTP. The Project Manager will become the main contact with JISC, maintain the project budget and produce required progress reports.

**4.4 Assistant Project Manager**

Jackie Macmillan HND of NHC, currently Project manager ECTP will be Assistant Project Manager and will be responsible for the overall running of the project, ensuring good communication between partners and working with the Project Manager to commission writers etc.

**4.5 Project Officers and Games Technologists**

Gavin Beattie of UEL, Jackie Mullen of GMC and Katrina Coghill of NHC will be Project Officers. Specialist Games technologists will be appointed.

**Appendix 1 Letters of Support**

**University of East London**  
Sarah Davies/Lesley Hawkins  
[elearning-bids@jisc.ac.uk](mailto:elearning-bids@jisc.ac.uk)  
Joint Information Systems Committee

20 June 2006

Dear Madam,

**JISC Circular 3/06: Cross-institutional use of e-learning to support lifelong learners in construction**

I wholeheartedly support the attached bid to create e-learning materials for lifelong learners in construction and construction management. There is a clear need for such learning materials within higher education and also within further education.

The three main academic institutions involved in our partnership are particularly well qualified to take a leading role in this project. For example, the University of East London has a well-established reputation in civil engineering, with a new Foundation Degree in Construction Management, and has an outstanding national reputation in developing e-learning materials. Our partners (Glasgow Metropolitan College and Lewisham College) have an excellent record in both construction and e-learning development.

East London and Glasgow are ideal regions in which to pilot these developments. Both regions have a demonstrable need to grow their local economies, create new jobs, encourage social inclusion and facilitate lifelong learning. Both regions require more skilled managers for large construction projects related in our case to the Olympics and the Thames Gateway Development and in Glasgow's case to the Commonwealth Games bid.

The key personnel involved in our bid are of the highest calibre. For example, we very pleased to have Professor McDonald, our Head of Lifelong Learning Centres and Director of Library and Learning Services, leading the project with his excellent track record of successfully completing numbers of research projects, some funded by the JISC itself. He will be supported in this project by Professor Suzanne Robertson, Head of our School of Distance and E-Learning and Paul Smith, Head of our School of Computing and Technology, and also Gavin Beattie from Library and Learning Services who is currently managing our JISC-funded project on the strategic management of ICT. The CVs of the other staff involved from our partner colleges and collaborating institutions are similarly impressive.

This bid will enhance the delivery of construction learning in the sector and has the full support of the University of East London.

Yours sincerely,



Professor Alan Sibbald  
Pro Vice Chancellor (Research, Outreach and Infrastructure)  
University of East London

**Glasgow Metropolitan College**

Professor Andrew McDonald FCLIP  
Director of Library and Learning Services  
Head of Life Long Learning Centres  
University of East London  
Longbridge Road  
Dagenham  
Essex RM8 2AS  
20 June 2006

Dear Professor McDonald

**Joint Bid to JISC: Construction e learning for Higher Education**

I am writing to tell you how strongly I support our joint bid to JISC (with University of Highlands and Islands, Moray College, North Highland College and Lewisham College).

As you know, if successful this bid, to develop e learning for Construction Higher Education, will build on our successful E Construction Transformation Project (ECTP), one of six e learning projects in the SFC funded E Learning Transformation Programme which is managed by JISC.

ECTP is part of Scotland's Learn Direct and Build Initiative and is developing a full range of e learning to support Construction Craft Modern Apprenticeships in FE across the UK. The new project to develop e learning for Construction Project Managers will be a major step forward in starting to transform HE Construction Provision.

There are many similarities between Glasgow and East London including the need to grow the local economies, create jobs, further social inclusion and encourage lifelong learning as well as a specific need for more skilled managers of our many large construction projects (related in your case to the Olympics and the Thames Gateway Development and in ours to Glasgow's Commonwealth Games bid. I believe it is very appropriate that we should work together with our other partners in this bid to enhance the delivery of construction learning in HE.

My very good wishes with the bid and I am happy that you use this letter to demonstrate our very strong support.

*Tom Wilson*

**Professor Tom Wilson**  
**Principal, Glasgow Metropolitan College**  
**Chair, Learn Direct and Build Strategic Forum**

**UHI Millennium Institute**

Professor Andrew McDonald FCLIP  
Director of Library and Learning Services  
Head of Life Long Learning Centres  
University of East London  
Longbridge Road  
Dagenham  
Essex RM8 2AS  
20 June 2006

Dear Professor McDonald

**Joint Bid to JISC: Construction e-learning for Higher Education**

I am writing as Dean of Science and Technology at the UHI Millennium Institute to tell you that I strongly support the joint bid to JISC (with Moray College UHI, North Highland College UHI, Glasgow Metropolitan College and Lewisham College).

North Highland College UHI and Moray College UHI are two of the thirteen institutions that are full academic partners of the UHI Millennium Institute. Recently they have partnered Glasgow Metropolitan College in a very successful E Construction Transformation Project (ECTP), one of six e-learning projects in the SFC funded E Learning Transformation Programme which is managed by JISC. ECTP is part of Scotland's Learn Direct and Build Initiative and is developing a full range of e-learning to support Construction Craft Modern Apprenticeships in FE across the UK. It is already transforming the teaching and learning of craft skills throughout the construction industry. A new project to develop e-learning for Construction Project Managers will be a major step forward in starting to transform HE Construction Provision.

The construction industry is booming throughout the UK and the industry reports that there is specific need for more skilled managers of many large construction projects. I believe it is very appropriate that we should work together with our other partners in this bid to enhance the delivery of construction learning in HE and thus help to meet this need.

Construction is one of the five partnership-wide Subject Networks in UHI's Faculty of Science and Technology so I hope very much that the bid will be successful. If it would be helpful, please use this letter to demonstrate my support.

With best wishes

Yours sincerely

*Paddy Maher*

**Dr Paddy Maher**  
**Dean of Science and Technology**  
**University of Highlands and Islands Millennium Institute.**

**North Highland College UHI**

Professor Andrew McDonald FCLIP  
Director of Library and Learning Services  
Head of Life Long Learning Centres  
University of East London  
Longbridge Road  
Dagenham  
Essex RM8 2AS  
20 June 2006

Dear Professor McDonald

Joint Bid to JISC: Construction e learning for Higher Education

This letter is to tell you how strongly I support our joint bid to JISC (with University of Highlands and Islands (UHI), Moray College UHI, Glasgow Metropolitan College and Lewisham College).

I believe that Professor Wilson has explained that, together with Moray College, we partner Glasgow Metropolitan College in the E Construction Transformation Project (ECTP), one of six e learning projects in the SFC funded E Learning Transformation Programme which is managed by JISC. In developing a full range of e learning to support Construction Craft Modern Apprenticeships, ECTP is transforming construction learning and teaching at FE level. The new project to develop e learning for Construction Project Managers will be a major step forward in starting the transformation of HE Construction learning across the UK.

Our renowned e learning unit, North Highland on Line, is working successfully with our partner organisations to provide e learning content for ECTP. Even more importantly, given that we are based in the far north of Scotland, and our ECTP partners are widely dispersed throughout Scotland, we have developed a method of working together using mainly electronic communications that successfully counteracts any potential geographical difficulties. This experience will be extremely useful with a new project in which the partners are dispersed across even wider horizons. I believe it is very appropriate that we should work together with our other partners in this bid to enhance the delivery of construction learning in HE across the UK.

You have my very best wishes with the bid and I look forward to working with the University of East London. I am happy that you use this letter to demonstrate the very strong support you have from North Highland College.

*Rosemary Thompson*

**Rosemary Thompson**  
**Principal, North Highland College UHI**  
**Member, Learn Direct and Build Strategic Forum**

**Moray College**

MD/JE/JK/SCB/3.1.2

20 June 2006

Professor Andrew McDonald FCLIP  
Director of Library and Learning Services  
Head of Life Long Learning Centres  
University of East London  
Longbridge Road  
Dagenham  
Essex RM8 2AS

Dear Professor McDonald

Joint Bid to JISC: Construction e learning for Higher Education

I am writing to tell you how strongly I support our joint bid to JISC (with University of Highlands and Islands, Glasgow Metropolitan College, North Highland College and Lewisham College).

You will know that Moray College is the lead partner in the successful E Construction Transformation Project (ECTP); one of six e learning projects in the SFC funded E Learning Transformation Programme which is managed by JISC. Through ECTP, we already work closely with Glasgow Metropolitan College and North Highland College and very much look forward to extending this successful partnership to include the your university, Lewisham College and University of Highlands and Islands (UHI). Our college is one of the constituent members of UHI as is North Highland College.

I am sure you know already that ECTP is part of Scotland's Learn Direct and Build Initiative and is developing a full range of e learning to support Construction Craft Modern Apprenticeships in FE across the UK. If we are successful with this new bid, the project to develop e learning for Construction Project Managers will be a major step forward in starting to transform HE Construction Provision. This bid is of great relevance to us as in our area there is a new town being built between Inverness and Nairn, a project that will call for a major increase in qualified construction project managers. East London, of course, has an even greater need with large construction projects related in your case to the Olympics and the Thames Gateway Development

My very good wishes with the bid. Please use this letter to demonstrate our very strong support for the bid and our desire to work closely with you in the new project.

Yours sincerely



Mike Devenney  
**Principal, Moray College**  
**Member, Learn Direct and Build Strategic Forum**

**Lewisham College**

Professor Andrew McDonald FCLIP  
Director of Library and Learning Services  
Head of Life Long Learning Centres  
University of East London  
Longbridge Road  
Dagenham  
Essex RM8 2AS  
20 June 2006

Dear Professor McDonald

Joint Bid to JISC: Construction e learning for Higher Education

This letter is to tell you how strongly I support our joint bid to JISC (with UHI Millennium Institute, Moray College, Glasgow Metropolitan College and North Highland College).

As you know, Lewisham College has a keen interest in life long learning – it is central to our mission statement - and we firmly believe that e learning can help to promote and embed lifelong learning, especially when it can be used to link education and training with the workplace. You will remember that we are a Centre of Vocational Excellence in Computing and Information Technology. Furthermore we have a very strong position in delivering construction education and training.

I was glad to see that Scotland's E Construction Transformation Project (ECTP) is developing a full range of e learning to support Construction Craft Modern Apprenticeships. This will transform construction learning and teaching at FE level. Similarly, if our bid to JISC is successful, our new project to develop e learning for Construction Project Managers will be a major step forward in starting the transformation of HE Construction learning across the UK.

I believe it is very appropriate that we should work together with our Scottish partners in this bid to enhance the delivery of construction learning at HE level, particularly as it will offer real progression to our construction craft students and also help to solve the local and national skills shortage of competent project managers.

Please feel free to use this letter to demonstrate the very strong support you have from Lewisham College.

Very best wishes

**RUTH SILVER**

Dame Ruth Silver  
Principal, Lewisham College London

**CITB-Construction Skills – letter supported by an email from Sue Rossiter, Manager,  
20/12 Thames Gateway Team, CITB-Construction Skills.**

DR3 HF  
20 June 2006

Professor Andrew McDonald FCLIP  
Director of Library and Learning Services  
Head of Life Long Learning Centres  
University of East London  
Longbridge Road  
Dagenham  
Essex RM8 2AS

Dear Professor McDonald

**Our Joint Bid to JISC: Construction e learning for Higher Education**

I am writing to tell you how strongly I support your joint bid to JISC (with University of Highlands and Islands, Glasgow Metropolitan College, Moray College, North Highland College and Lewisham College).

As you know, CITB-ConstructionSkills is the Sector Skills Council for the UK construction Industry and we are a founder member of the Learn Direct and Build E Learning Initiative of which I am Deputy Chair. CITB-ConstructionSkills is responsible for ensuring that our partners in FE and HE meet the education and skills development needs of the industry. At FE level we are doing this through our support for the successful E Construction Transformation Project (ECTP), one of six e learning projects in the SFC funded E Learning Transformation Programme, which is managed by JISC and is developing a full range of e learning to support Construction Craft Modern Apprenticeships in FE across the UK.

A new project to develop e learning for Construction Project Managers will be a major step forward in starting to transform HE Construction Provision and meet the industry's skills needs across the UK. All our labour market research shows that there is a dire shortage of competent project managers for major construction projects throughout the UK but particularly in Glasgow relating to Glasgow's Commonwealth Games bid and in East London to the Olympics and the Thames Gateway.

You have the full backing of CITB-ConstructionSkills in making this bid. If it is successful, my colleagues in our Management Development Unit have promised to consider funding a sister project to increase the scale and scope of your new project.

My very good wishes with the bid and I am happy that you use this letter to demonstrate our very strong support.

Yours sincerely



Graeme Ogilvy  
Scottish Manager CITB-ConstructionSkills  
Depute Chair, Learn Direct and Build Strategic Forum

## **Appendix 2 The Learn Direct and Build Initiative**

### Learn Direct & Build (LD&B) Update May 2006

#### Learn Direct and Build

The Partnership Initiative and Strategic Forum, Learn Direct and Build (LD&B), is meeting the Built Environment Industry's needs by developing an e and blended learning solution to the dual problems of training new youth and adult entrants to the built environment industry and up-skilling the existing work force. Many employers have scant knowledge of what is available and are unsure what their businesses and thus what their employees need or even what they need themselves. In many geographical areas, training provision is in short supply or oversubscribed. Meeting these challenges requires effective and non-traditional forms of learning and the development and harnessing of new learning technologies.

#### LD&B Provision

Initially LD&B obtained funding from learndirectscotland and CITB Construction Skills to make a start on developing some management, craft and health and safety learning. More recently LD&B has been adding to this initial provision and is also developing e learning to facilitate the acquisition of:

- Core skills, employability skills and basic skills and built environment knowledge amongst young people and adults entering or thinking of entering the built environment industry
- Essential sole trader and owner manager competencies, especially for owner managers who are also still on the tools
- Site management, project management and technician skills for building and civil engineering, thus ensuring a clear progression route for craft workers
- Additional craft skills
- Specialist and traditional craft skills relating to conservation and restoration and the maintenance and repair of historic buildings with links to the supply chain such as quarries and metal works.

#### LD&B Consortium

The consortium includes many key bodies charged with ensuring that the Built Environment Industry's workforce is well trained to the Industry's demanding standards and well disposed to lifelong learning including continuing professional development. The consortium is led by CITB- Construction Skills and includes:

1. Employers
2. Careers Scotland
3. Glasgow Metropolitan College, North Highland College, Moray College, Edinburgh's Telford College, Inverness College and other associated FE Colleges
4. Glasgow Caledonian University
5. Health and Safety Executive
6. Highlands and Islands Enterprise
7. Historic Scotland
8. Learndirectscotland
9. ProSkills
10. Scottish Building
11. Scottish Enterprise
12. Scottish Funding Council
13. Scottish Lime Centre
14. SQA
15. Scottish Stone Liaison Group
16. Scottish University for Industry/learndirectscotland

17. Summit Skills
18. University of East London
19. UHI Millennium Institute
20. University of Strathclyde

This is the first time in Scotland that such a range of partners has come together to develop and deliver innovative built environment skills development. The consortium liaises with:

- Association of Scottish Colleges
- Communities Scotland
- Futureskills Scotland
- Local Authorities including Glasgow and Edinburgh City Councils
- Learning and Teaching Scotland
- Scottish Construction Forum
- Scottish Executive
- Scottish Further Education Unit
- Sector Skills Development Agency and the Skills for Business Network
- Sector Skills Alliance Scotland
- STUC and Trade Unions
- Trade Federations
- Universities Scotland

#### LD&B Learning solutions

LD&B ensures that its provision:

- Involves all relevant partners including employers and the federations in the development stage and is available to learners, employers and FE colleges throughout Scotland as and when needed
- Meets identified industry and learner and tutor/trainer needs
- Provides cost effective training solutions
- Uses and develops appropriate and innovative pedagogical approaches including games technology
- Transforms current built environment education and training, making it flexible, adaptable and sustainable whilst being attractive to and enjoyable for learners, tutors and trainers
- Meets all relevant quality and technical standards to ensure SCORM compliance, interoperability between learning management systems and easy access for learners and trainers in university, college, training departments, workplace and home.

#### LD&B Aims

LD&B aims to:

- Enhance youth entry – it can provide induction training and knowledge and understanding of the industry
  - Encourage adult entry - it can provide the same facilities for adult recruits and potential recruits
  - Develop craft, technician and management skills and specialist and additional skills – through learning materials for conservation, restoration, repair and maintenance of existing and historic buildings
  - Promote workforce development – by helping to up-skill small built environment firms
  - Create capacity and develop institutions - through its virtual centre and help desk and by transforming the flexibility of delivery for FE Colleges, Universities and training providers
  - Raise awareness of the industry – by persuading employers of the need to train and making workplace and out of hours training more accessible
1. Demonstrate to the built environment sector the advantages of relating to a digital, smart, successful Scotland
  2. Encourage individual built environment companies, including SMEs and micro businesses to develop competitiveness, sustainability and growth

3. Support individual employers to develop management, leadership and enterprise skills
4. Persuade employees to engage with and buy into lifelong learning and continuing professional development
5. Assist new recruits to access learning as a prelude to entering the built environment industry
6. Further social inclusion by helping individuals gain employment related skills and strengthen local communities by helping to create a strong local economy

#### LD&B objectives

LD&B objectives are to develop blended and e learning materials of the highest quality to deliver learning related to the built environment sector in order to:

- Support built environment education and training wherever it is being delivered in Scotland
- Provide e and blended learning in a variety of modes and VLEs, demonstrating full interoperability and SCORM compliance
- Support the delivery of SVQs, Modern Apprenticeships, HN and professional qualification provision
- Support small businesses in terms of both training and development
- Make high quality training accessible in rural and island areas of Scotland
- Create learning opportunities for those considering a career in the built environment
- Provide learners with experience of lifelong learning from general operative and craft level onwards to equip them to adopt lifelong learning habits and to use e learning throughout their career
- Meet the education and training needs of supervisory and management staff in the built environment industry
- Develop stimulating learning materials especially in respect of areas of the curriculum that are difficult to teach
- Provide learning materials for students who through ill-health or other reasons miss part of a training course
- Ensure that repair and maintenance training is supported through e learning
- Provide appropriate learning opportunities for immigrant workers
- Encourage the transfer of built environment skills and knowledge across Europe and especially between Eastern and Western Europe.

#### Researching built environment e learning

To provide a one-stop shop for built environment learners and employers, as well as consulting other sectors, it is essential to research and incorporate any other high quality built environment e and blended learning developments into LD&B. Research based on these tenets is carried out under the aegis of various LD&B projects.

#### Managing Projects

The LD&B Strategic Forum advises on issues of importance, especially that of meeting the needs of industry and of learners, identifies and seeks funding opportunities, maintains an overview of all projects, monitors progress, provides formative and summative evaluation advises on implementation issues and ensures that all the projects inform and add value to each other.

#### Methodology

All projects share the same methodology, overall format and learning platforms. Each separate project has its own management group and team that are accountable for meeting project targets and managing project finances.

## IPR

The formal IPR holders may differ from project to project but all LD&B partners agree to share freely all materials that are produced by projects under the LD&B umbrella.

Historic Scotland has given LD&B the legal right to use any HS material. Informal arrangements have been agreed with Health and Safety Executive and CITB-Construction Skills.

## One Repository

It has been agreed that all LD&B materials should be held in one electronic repository, even though some products will be included in other repositories (e.g. JORUM)

## Learning Management System

Although LD&B materials can be delivered through a variety of SCORM compliant learning management systems, LD&B has developed its own LMS for clients who need this. This is called Built Environment e learning and is known as BEE.

## Branding

It has been agreed that all LD&B projects should share:

- Overarching LD&B branding
- A single web site: [www.learndirectandbuild.com](http://www.learndirectandbuild.com)

## Sustainability

LD&B is currently funded through separate development projects but to ensure future sustainability it is essential that:

- Learning materials are capable of being easily updated by tutors (this is now built in to the development process)
- Financial support comes from Industry (all the LD&B material is capable of being tailored to reflect commercial sponsorship).

Opportunities for commercial sponsorship and the advantages and disadvantages of such an approach is being researched as are the opportunities for selling and delivering LD&B provision abroad.

## LD&B Projects - completed

Past projects include:

- E learning units to provide some of the knowledge and understanding associated with craft SVQs – two projects funded by learndirectscotland, completed March 2004.
- Health and Safety HND material – one project funded by CITB Special Measures Programme, completed December 2004.
- Learning provision for small and micro business managers – one project funded by Scottish Executive Skills fund, £40k, completed March 2005.
- SVQ supervisory and management materials - one CITB–Construction Skills project funded by CITB Management Development Unit, £100k, completed December 2005.
- Repair and Maintenance project funded by learndirectscotland – “Stonework” (£25k).

## LD&B Projects - current

Current projects include:

- E Construction Transformation: Moray College/Glasgow Metropolitan/North Highland and associated FE colleges – e construction transformation, funded by Scottish Funding Council, supported by JISC, evaluated by Glenaffric (£900k). Craft level brickwork, stonework, carpentry and joinery, roofing and painting and decorating. Now includes heritage. Started in May 2005 to be completed in August 2007.

- SQA – e verification HN research project (£20k).
- Historic Scotland – initial funding for project based on INFORM leaflets (£20k).
- Scottish Lime Centre – e learning bytes for conservation units (£20k).
- Learndirectscotland – £10k start up project to translate LD&B Health and Safety materials into Polish for migrant workers (for UK delivery but plans are in hand to extend translation to other languages and extend delivery to Europe to reach migrant workers before they leave their East European countries).

LD&B Projects - agreed and waiting contract

Projects awaiting contracts include:

- Learndirectscotland. Delivery project – sum to be agreed
- SE Glasgow under CSAP (£400k). Small business skills, additional skills fro qualified crafts people
- HIE (50k). Generic skills for construction.
- CITB-Construction Skills. Heritage Game (£8k plus £12k development work from E Construction)

LD&B Projects - under negotiation

Projects under negotiation include bids to:

- HSE for migrant worker H&S
- HSE for occupational health
- JISC for HE and management provision
- National Trust Scotland for visitor attractions
- CITB-Construction Skills for HN Painting and Decorating
- CITB-Construction Skills, learning materials for Skills for Work (and GCSEs) (£2k plus £18k from other funders.

**Tom Wilson, Graeme Ogilvy, Jenny Kellie**  
**May 2006**

### **Appendix 3 E Construction Transformation Project Update**



### **LD&B E CONSTRUCTION TRANSFORMATION PROJECT (ECTP) UPDATE**

#### Introduction

Moray College (MC), Glasgow Metropolitan College (GMC) and North Highland College (NHC) are the leading college project partners, with Inverness College and Aberdeen College also being part of the formal consortium. In addition, Lauder College (giving advice on pedagogy) and Edinburgh's Telford College (seconding staff to the project) are providing invaluable help. The project is part of the Learn Direct and Build (LD&B) initiative to develop e and blended learning for the construction and ancillary service industries in the wider built environment sector. LD&B has a wide range of strategic partners of which SFC, CITB-Construction Skills, SQA, Historic Scotland, learndirectscotland and employers are of major importance to this project. All LD&B projects avoid duplication, focus on synergy and add value to each other and LD&B as a whole.

#### Project aims

The context of the project is the need to support Scotland's economy through the growth of the Scottish construction sector and the need to resolve skills shortages and gaps. The overall aim of the project is to produce e learning content in order to transform the efficiency, effectiveness and economy of the Scotland-wide college delivery of work-based qualifications and learning for construction Modern Apprentices in the craft areas of:

- Brickwork
- Carpentry and Joinery
- Painting and Decorating
- Roofing and Tiling
- Stonework.

Central to the project is the underpinning objective of transforming individual learning and teaching experiences, giving the learner more control and responsibility as well as encouraging the tutor towards an approach where he or she performs a supporting and enabling role to complement more traditional methods of delivery. A further objective is to reduce the amount of face-to-face teaching and learning contact for craft modern apprentices by 10%.

#### Timescale

The project started in May 2005 and will finish in August 2007. The first interim report was submitted on 31 January 2006 and a formal project update was prepared for the visit of the programme evaluators, Glenaffric in early April 2006 The present paper is an extension of that update to cover the period from April to early June 2006.

#### Methodology

Research is undertaken on industry, college and learner needs and the transformation of learning and teaching experiences. Subject experts map SVQs, source or author teaching packs then draft the content of the e learning units up to storyboard stage, before NHC and commercial developers, Junction 18, produce the finished e-learning units to be delivered on the worldwide web and by a variety of VLE platforms and intranets. The provision is based on the most appropriate pedagogy so as to be engaging for learners and easily supported by tutors. All materials are capable of being easily updated by College staff. SQA provide advice on verification and assessment.

### Equal Opportunities

Project outputs will be accessible by, acceptable to and appropriate for learners of all ages, male and female genders, learners from all ethnic groups and learners with sensory disabilities with a particular focus on construction Modern Apprenticeships.

### IPR and Copyright

The copyright and intellectual property rights for all learning materials rest with the Project Partners and LD&B but project outputs will be made freely available to all HE and FE institutions in the UK.

### Progress on Work Packages

Progress on Work packages is shown in Table 1.

**Table 1**

WP	WP title	Start date	Finish date	% Completed by 31.01.06
WP 1	Set up project	May 2005	Oct 2005	100
WP 2	Research	Aug 2005	Dec 2006	75%
WP 3	Staff development	Aug 2005	Feb 2006	90%
WP 4	Design e packs	Sept 2005	Nov 2005	100%
WP 5	Develop phase 1 e packs	Oct 2005	June 2006	80%
WP 6	Test phase 1 developments	Jan 2006	Mar-Oct 2006	75%
WP 7	Develop web site	Sept 2005	Aug 2007	80%
WP 8	Develop and test learning management system	July 2005	April 2006	80%
WP 9	Develop virtual building site	Oct 2005	April 2006	80%
WP 10	Develop phase 2 e packs	Mar 2006	Dec 2006	
WP 11	Test phase 2 developments	April 2006	Dec 2006	
WP 12	Dissemination	Jan 2007	Mar 2007	
WP 13	Implementation	Mar 2007	Aug 2007	
WP 14	Evaluation	Sept 2005	Aug 2007	Ongoing
WP 15	Project management	May 2005	Aug 2007	Ongoing

### Main outputs to date

The most notable project outputs so far are the:

- Project research
- Successful and productive links with internal and external partners and stakeholders including the TESEP Project.
- Break down of barriers between participating institutions
- Development of the Project Plan as a living document and essential project management tool
- Formation of a closely knit project team with all roles and responsibilities clearly defined and implemented
- Excellent risk assessment and problem solving, particularly in relation to staff appointment and replacement and also to researching the wider FE construction sector
- Project definition of transformation
- Project definition of learning styles
- Project web site
- Virtual construction site
- Project learning management system (BEE)
- E unit design templates
- Identification of full range of learning objects
- Categorisation of development approaches
- Identification and development of source materials
- College and employer commitment to test and use the e packs
- Successful problem solving and risk management
- Gathering baseline data

Problem Solving

Problems and potential problems identified and solved or in the process of resolution are shown in Table 2.

**Table 2**

Potential or real problem	Solution/Resolution
Meeting industry, learner and tutor needs	Robust research Links with Sector Skills Councils and employers through LD&B Consultation and testing with tutors and learners
Geographical dispersion of Project Partners and Staff	E communication strategy and techniques Synchronising LD&B, PMG and Core Team meetings Meeting halfway at Project Director's Highland Office
Effective partnership working	Use of LD&B forum to identify partners who can offer practical help Attendance at JISC events Links with TESEP Links with SQA, CITB-Construction Skills, Historic Scotland, Scottish Lime Centre and Scottish Stonework Liaison Group
Effective project management e.g. <ul style="list-style-type: none"> <li>▪ Replacement of original Project Manager</li> <li>▪ Need to retain Coordinator (Stonework) when he changed college.</li> <li>▪ Need to appoint Coordinators (Painting and Decorating, Roofing and Tiling) after deciding to cover more areas of work</li> <li>▪ Arrangements made to cover Heritage Sector</li> </ul>	Guidance from JISC and Glenaffric Advice from Project Leaders and Project Management Group Effective risk assessment and risk management strategy Appointment of experienced Project Director and substitute for absence Speedy replacement/recruitment of Project Manager Renegotiation with new college for secondment of Coordinator (Stonework) Further negotiations re Painting and decorating, roofing and Tiling and Heritage. Robust tendering arrangements for college and commercial developers Constant intra - project communications Project specific adaptation of Prince 2 and JISC documentation Synchronisation of related meetings
Effective team working	Staff development and team bonding exercises Regular real and virtual team meetings Definition and negotiation of individual job roles and responsibilities
Major SVQ mapping problem on discovery of mismatch between SVQs and SQA Training and Assessment Packs (TAPS)	Discussions with SQA Training event at SQA Team decision to use TAPS plus Coordinators' additional knowledge as basis for e unit content
Avoiding duplication and conserving resources	Researching and accessing relevant materials e.g. TAPS and Further Education National Consortium (FENC) teaching materials
Defining "Transformation"	Team discussions Discussions with JISC and Glenaffric Advice from partners and stakeholders Revision of original definition

**Update for the period 6 February 2006 to 10 June 2006.**

Staff changes

Jeff Brown of Edinburgh's Telford College started work as Project Coordinator, Painting and Decorating.

Jamie Sutherland West, Project Officer (IT) left North Highland College and thus the project. Katrine Coghill took over the position with a redefined job remit, concentrating on materials development. Her job title is Project Coordinator (Materials Development).

Jackie Mullen's job title was changed from Project Officer (Admin) to Project Coordinator (Admin and Resources).

Sean Bremner has been appointed to cover Roofing and Tiling

Gillian Ferguson has been seconded from Historic Scotland as Heritage Coordinator

#### Staff development (see Paper PM4-16.06.06-5)

6 FEBRUARY 2006

John Ellwood, Jenny Kellie and Jackie Macmillan met with NHC staff to discuss development issues.

8 FEBRUARY 2006

A one-day Core Team event was held in GMC to define and agree development issues

22 AND 23 MARCH 2006

A two-day Core Team event was held in GMC to further define and agree development issues.

7 June 2006

A one-day Core Team event was held at Kincaig to share information and discuss development issues.

#### Conferences attended

John Ellwood and Jacky Macmillan attended the JISC Conference in Birmingham on 14 March 2006.

John Ellwood, Jenny Kellie, Jacky Macmillan and Katrine Coghill attended the Learner Driver Conference at Heriot Watt University on 31 May 2006

#### Presentations given

Andrew Shaw presented an overview of the project to the CETIS event on 17 March  
Jacky MacMillan delivered a presentation at the Transformation Programme event at Lauder College on 11 May 2006.

Jenny Kellie and Jacky MacMillan presented an overview of the project to Inverness college staff on 5 June 2005.

John Ellwood and Jacky MacMillan delivered a presentation at the Learner Driver Conference on 31 May 2006 and subsequently ran a workshop session assisted by Jenny Kellie, Katrine Coghill and Junction 18 staff

#### Project Management Group

A meeting of the Project Management Group was held on 9 February 2006. Lou McGill of JISC attended the meeting and reported on the TESEP project (Pascale Gay was unable to attend as she was ill).

A meeting of the LD&B Strategic Forum, which was also attended by some project members, followed the PMG meeting.

#### Liaison with other SFC transformation projects

Jenny Kellie attended the TESEP PMG meeting on 16 March.

Jacky MacMillan attended the new Project Managers' Group meeting on 8 March.

John Ellwood, Jenny Kellie, Jacky MacMillan and Jackie Mullen attended the Transformation Programme meeting at Lauder on 11 May 2006.

#### Baseline data

The paper on baseline data has been revised

Health and Safety Executive

HSE is:

- Providing content
- Assisting with the quality assurance process through vetting all project products.

HSE is also to provide LD&B with some development funding and will endorse and badge LD&B materials

Additional outputs

**WHAT TRANSFORMATION MEANS**

The project has revised its definition of transformation

**LEARNING STYLES**

The project has done further work on investigating learning techniques. Professor Wilson has authored a key project paper on this important topic

**DEVELOPMENT APPROACHES**

The Core Team has further defined its approach to Learning Objects TUTOR SUPPORT  
The team has been investigating ways to help tutors in the delivery of the project's learning materials. Jacky MacMillan has led this work.

**TESTING PRODUCTS**

The strategy for testing project materials is currently being developed by the team (see Paper

**EVALUATION STRATEGY**

The Project Director has produced a draft evaluation strategy

JORUM and IPR

There are some difficulties with IPR and copyright, particularly in relation to depositing project materials in the JORUM repository. The matter was discussed at the Programme meeting on 11 May 2006 but many issues still have to be resolved.

Next steps

Work is currently underway on the second interim report which has to be submitted by 31 July 2006.

Updating and revision is being undertaken on the Project Plan and Evaluation Strategy.

Dissemination Plans are being put in place to include:

- An event for CITB-Construction Skills staff on 22 June 2006
- Participation in Skills City at Dingwall from 12 to 14 September 2006
- Participation in National Construction Week events in October 2006.

Consideration is being given to encompassing mobile phone learning technologies into the work of the project.

More staff are being engaged to support the work of the subject coordinators by providing ongoing informal evaluation.

**Jenny Kellie**  
**June 2006**

**Appendix 4 Glenaffric Report on ECTP**

**SFC e-Learning Transformation Programme Evaluation  
Visit**



e-Construction Transformation Project, Glasgow Metropolitan College, Tuesday 4 April 2006

Introduction

As part of the formative evaluation of the SFC e-Learning Transformation Programme, Glenaffric Ltd conducted a series of visits to projects in March and April 2006. The main purpose of the visit was to explore the following objectives from the Programme Evaluation Framework in the context of each project:

- to assess the extent to which the projects met their aims and objectives; and
- to assess the extent to which projects implemented new models of delivery in FE and HEIs.

This included open and interactive discussion around the following areas:

- progress against objectives
- refinement of project scope
- intended outputs and outcomes
- project evaluation plans and approaches
- exploring the nature of transformation in project institutions

The team had circulated a number of papers to inform discussion at the meeting, including a project update, baseline data report, learning strategies report, evaluation strategy, learning object development process documents and materials development strategy. The meeting also included a demonstration of some of the content that is being developed through the project, and the Built Environment for e-Learning LMS (learning management system).

Participants

Jenny Kellie (Project Director), Jacky MacMillan (Project Manager), John Ellwood (Moray College), Professor Tom Wilson, Jacky Mullen (Glasgow Metropolitan College), Andrew Shaw, Thomas Kelly (Junction 18), Veronica Adamson, Jane Plenderleith (Glenaffric Ltd)

Project update and scope

The project is progressing well. The team has gelled despite the geographical dispersal of project partners, and has developed some effective communication and meeting strategies including using Skype and a SharePoint project website.

The development of learning objects for topics relating to Modern Apprenticeship (MA) courses is on schedule, with developments monitored closely by the project management team. Generic Health & Safety materials are being developed in preparation for the industry-standard CITB Health & Safety test. These materials are relevant for higher national (HN) provision and other VQs as well as MAs.

To date, staff development requirements arising from involvement with the development and testing of materials have been met within the team. The learning object development strategy for the project has been based on resources in the JISC Effective Practice with e-Learning publication.

The team has experienced some variability in the approach taken and advice given from different SQA external verifiers. This inconsistency has been raised with SQA, who advise that following an internal restructuring, closer links with verifiers should help to ensure consistency of approach. The project is also helping to raise issues with regard to online verification at a strategic level in SQA.

IPR and copyright issues for the wider availability of project outputs are currently being addressed through discussion with JORUM and COLEG. It was noted that the need for key agencies to engage with the complexity of copyright clearance and adopt a national approach on behalf of the whole education sector has been addressed by the JISC Distributed e-Learning Advisory Board which has strategic oversight of the SFC Transformation Programme. The issue has been escalated to the attention of the appropriate JISC committee and the JORUM Advisory Board. The Board noted that the Transformation programme has helped to crystallise and bring into focus a problem that has been affecting the implementation of JORUM across the UK.

The team noted the key recommendation of the Digital Scotland Task Force<sup>1</sup> that all learning materials produced with public funds should be freely available for use by all Scottish educational institutions, and IPR solutions should be found to permit this. The Funding Council is also involved in negotiations with COLEG with a view to developing a national agreement for the sector in Scotland. In the meantime, a working solution has been found that suits the immediate requirements of all parties, and enables projects to concentrate their efforts on the development and repurposing of materials.

The team was concerned to ensure the quality of the materials that are deposited in JORUM and was reassured that a mandate is being implemented for the ongoing quality assurance of materials in the repository.

#### Project management and reporting

The project is regularly updating its risk analysis strategy as a project management tool. At the outset, the project team had concentrated on known internal risks that might affect the project, such as staff capacity and the effectiveness of the project management processes. They had not really identified the potential risk to the project of significant changes in the external environment affecting major stakeholders such as Scottish Enterprise. The implications of such external issues and risks are addressed for the project through the overarching strategic management of the learndirect and build (LD&B) Strategic Forum.

It was noted that the eCT project team had used an alternate template for the interim project report, which included information under all the headings required by the JISC programme management, but in a slightly different format from the template provided. The ECT interim project report fulfilled a number of functions, including a report to the LD&B Strategic Forum. It was agreed that it is advantageous and in the best interests of the project if reports fulfil a useful function in terms of project development beyond satisfying monitoring and funding requirements, and that such dual purpose reporting was to be encouraged where appropriate.

#### Evaluation and baseline information

The project team has conducted a survey by questionnaire of construction training provision across the FE sector in Scotland. Responses to date have revealed some interesting anomalies in the amount of face-to-face tuition that is claimed to take place in institutions. There may also be some issues with regard to the validity of the data that was supplied. The objectives of the ECT project touch on some sensitive areas in FE provision with regard to perceptions of staff workload, expertise, custom and practice. Given the profile of the ECT project as an important strategic element of developments with LD&B and the SFC Transformation Programme, the possibility that respondents were providing what they thought was the 'right answer' rather than a true reflection of reality cannot be discounted.

The team is therefore considering following up on the survey with targeted visits to explore some aspects of provision in more depth. This should also provide some rich illustrative examples with local variations to clarify the baseline data and help to illuminate the overall picture of construction provision in the sector. There may also be opportunities to identify and use existing datasets for baseline profiling, such as a recent HMIe study of changing experiences of learning in the sector.

There was some discussion about data analysis methods and tools. The team is aware that analysing and measuring 'soft' transformational change poses more challenges than measuring progress towards the project 'hard' targets in terms of reducing class contact time. The need for efficient processes to analyse data for common or emergent themes was discussed. It was generally agreed that the use of predictive data analysis tools such as SPSS<sup>2</sup> was not required in this context, and that the needs of the project could be met using a simple spreadsheet application such as Excel. The potential use of colour and key word tagging was noted.

It was suggested that institutions could be asked to provide a short profile of current and changing approaches to learning and teaching. The evaluation team undertook to supply a modified case study template that could be used to gather examples of changing practice in the area. These could then form the basis for wider dissemination of the project activities and impact.

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<sup>1</sup> Scottish Executive, Digital Scotland Task Force Report, May 2000

<sup>2</sup> <http://www.spss.com/>

#### Project learning strategies

The project team has produced a position paper on Learning Strategies and Transforming Learning. This provides a historical context for the development of skills in a flexible learning environment that is responsive to the needs of individual learners. The paper makes the key point that personalised, individualised learning has always been available on a localised basis to those who could afford it, and charts the development of apprenticeship training in the context of developing understanding of multiple intelligences and learning styles. Technology presents opportunities to address potential tensions in meeting the need for individualised learning in an era of mass education and learning for all, and the increasing scope and scale of apprenticeship training requirements.

Discussion on learning strategies covered a number of issues, including the notion of learner control and responsibility in a tradition of instructional transmission and the development of craft skills for professional application. The need to acknowledge the role of the tutor/expert in developing skills and establishing an environment where personalised learning can take place was emphasised. Understanding learning strategies and individual learning styles may help to break the traditional mould of authoritarian control in the construction industry, developing a more democratic relationship between teachers and learners, managers and apprentices.

#### Transformation

As the work of the project in developing learning materials has progressed, awareness of the transformational context of the activities has increased. The focus on transformation has helped to inform awareness of the context and ways of working across the whole spectrum of LD&B developments, and the ECT project has already had a positive impact on the LD&B initiative as a whole.

While the project aims to make significant progress towards transforming construction training provision during the funded period, the team recognises that achieving genuine transformation in the area is a long-term process. There is a real challenge in changing the mindset of tutors to accept that genuine learning can be enhanced through reducing direct face-to-face input. The project is also highlighting opportunities extend the focus of transformation from construction training to other MA programmes and areas of college provision.

The materials developed through the project are key components in the wider context of LD&B developments, and the team is preparing for the sustainability of the project outputs beyond the lifetime of the ECT project. The project touches on a number of key strategic bodies in the construction sector. While there are significant advantages in being part of this wider landscape of developments, the team is aware of the need to address potential sensitivities to ensure that partners understand and appreciate their role and are sufficiently informed of developments in the overall context.

#### Project outputs

The project team has produced a definition and categorisation of the features of different types of learning object as an aid to the materials development process. A considerable amount of dialogue and discussion went into the process of determining types of development depending on features exhibited, possible interactions and specific learning styles. This consultation and discussion has resulted in a shared understanding and ownership of the learning object definitions and the development processes that were agreed. It has also raised awareness of accessibility issues for materials development in general, and has encouraged wider understanding of learning and teaching processes. The categorisation will be used for future evaluation of project outputs and may help to shape future developments if it transpires that objects of a particular type are more or less appealing to learners than others.

Materials are being developed using standard applications such as Adobe/Macromedia Suite and Dreamweaver. Storyboarding is not felt to be necessary given the experience and design capabilities of the developers. The development of resources is underpinned by an awareness of the priority of meaningful learning over technical prowess and possibility.

The online materials are produced for an audience that is used to a high-end visual and audio experience through interacting with computer and video games. Features include the use of the full screen, as initial testing indicated that users are deterred by icons and menu toolbars. It was noted that the development of learning resources on a gaming model has implications for user interfaces and keyboard configuration, as buttons and symbols have particular

functions that are common to most gaming consoles but different from basic PC applications. There is an interesting issue here in the different computational skills that learners may be using with these devices. The developers are aware of the need to avoid disadvantaging users who may not have the keyboard skills required to interact with the learning materials produced as gaming simulations.

The resources are configured to cope with low bandwidth situations by giving users the option to omit some features. Learners can access the history of their interaction with the materials and print it out for future reference and as a record of achievement.

A virtual office simulation is used with a common reception area, and a lift and corridors leading to multiple potential training environments. There is also potential to develop the materials in multiple languages, which is particularly relevant given the number of non-native English speakers currently employed in the construction industry. Future development plans may include the inclusion of sponsored screen savers, streaming RSS content and the use of advertising space.

There may be commercial opportunities for the further development of the materials, including some potential international interest. There are plans for a LD&B dissemination event in summer 2006.

#### Project evaluation strategy

The current draft project evaluation strategy was discussed. It was noted that this captures many of the issues around the scope of the evaluation, recognising the difference between formative and summative evaluation, and identifying stakeholders in the evaluation process. The team recognises that further work is required to develop this starter paper into an operational plan for the project level evaluation.

In discussion, three key areas for development were suggested: evaluation objectives, identifying stakeholders, and sources of evaluation information. The key issue for the evaluation strategy is articulating the overarching purpose of the project evaluation, and defining the evaluation objectives. The team could brainstorm possible evaluation questions to help focus on the key issues, and set some realistic boundaries for the overall evaluation. The importance of gathering useful evaluation information that can be analysed in meaningful ways was emphasised, and the value in asking simple questions relating to key areas of interest.

It may be possible to access existing sources of relevant evaluation data from processes already operating in the project institutions. Stakeholders with an interest in the evaluation process and results may also have an interest and a role in terms of the wider dissemination of project outputs and outcomes.

The team discussed the possibility of appointing an external evaluator to explore some areas of the project from an independent perspective. This could be of value in authenticating the project outputs for strategic industry bodies and the FE sector as a whole.

#### Future evaluation themes

*The project team has been asked to suggest key indicators for review in the programme evaluation process at a future visit (probably Spring 2007).*

## Appendix 5



### **ECTP Materials Testing Strategy**

#### **Introduction**

The project team has held several development and planning sessions to examine how best to test the e learning materials produced by the project.

Currently, the project has identified all the learning objects and how these will be developed in the craft areas of:

- Brickwork
- Carpentry and Joinery
- Painting and Decorating
- Roofing and Tiling
- Stonework.
- Heritage

#### **Colleges to be involved in testing**

The partner colleges in the ECTP are Moray College, Glasgow Metropolitan College, North Highland College, Inverness College and Aberdeen College. These colleges will all be involved in piloting and testing the material outputs of the project. Additional piloting and testing arrangements are being made with the following colleges:

- Edinburgh's Telford
- Clydebank
- Orkney
- Lauder
- Dumfries and Galloway

#### **Testing elements**

Materials will be tested with regard to:

- Functionality (re bugs)
- Content accuracy and accessibility
- Technological accessibility
- Effectiveness as a learning tool
- User friendliness
- Level of learner engagement (attractiveness)
- Pedagogical appropriateness
- Pedagogical Effectiveness

#### **Methodology**

Testing methodology will include the use of:

- Tutor pilot check lists
- Learner pilot check lists
- Focus group feedback forms.

**Jenny Kellie**  
**Project Director**  
**June 2006**



## **E Construction - Learning Object Information Sheets**

**Jacky MacMillan, Project Manager, LD&B ECT**

### **Background and context**

It is well documented that there is currently a skills shortage in the Construction Industry. There are many reasons for this shortage, one of which could be that training is not thought to be high on the priority list of many construction companies. Questions have been asked as to the reasons for this. In fact a recent survey (get details from Jenny) highlighted two of the reasons for this being the:

- restrictive nature of current training practices which mean employees being away from the workplace for considerable periods of time
- relative difficulty in accessing timely and flexible training opportunities

The E Construction Project hopes to bring a more flexible approach to teaching and learning to the construction industry. This will surely help address some of the issues raised.

According to JISC – Planning and Evaluation Effective Practice- Individuals learn more effectively when they are:

- Active, that is opposed to passive, in that they are doing something
- Motivated and fully engaged with what they are doing
- Using skills and capabilities they already have
- Appropriately challenged
- Given opportunities to engage in dialogue with a tutor or mentor
- Given timely and constructive feedback on their activities
- Given a chance to consolidate, practice what they have learned in their normal roles

It is widely thought that a blended approach to teaching and learning, which combines a practical hands on approach to demonstrations, explanations and activities with the use of electronic resources and e learning methodologies both engages and motivates the learner.

### **Key Features**

The E Construction – E Learning Transformation Project will give FE tutors a chance to transform the learning experience of their construction students through the use of high quality, readily available, flexible, electronic resources. Our trials have shown that, apart from improving the learner experience, a major spin off from this approach to teaching is the potential reduction in face-to-face class contact time.

The project has built on the work of the first successful Learn Direct and Build project, which brought the Virtual Building Site to Scotland's Colleges for the first time.

The days of paper handouts and chalk and talk teaching in the Construction Trades could be about to be a thing of the past.

### **E Construction Learning Objects have been designed so that they**

- **Are flexible**

Capable of being used in many ways

- **Are accessible**

Meeting current standards regarding disability accessibility

- **Allow tracking**

Student progress can be logged and evidence of competence recorded

- **Platform Independent**  
Can be loaded on different content management systems, or can be web based
  - **Can be re-branded**  
Can be badged according to client/ company requirements
  - **Are educationally meaningful**  
Quality assured subject content.
  - **Engage the learner**  
Quality assured pedagogical principles and designed with the learner in mind
  - **Are simple to use**  
Content will prepare learner for tasks and activities within SQAs TAPS packs
  - **Easily Updated**  
Content developed in such a way that timely alterations and updates can be made.
- As well as many more Virtual Building Site Scenarios, E Construction brings 4 additional types of Learning Object to the table, all designed specifically with the hard to reach learner in mind. They are both interactive and engaging and can be used in many different ways, by different users. Sample learning plans and tutor guides to help make the best use of them

Type	Features	Interactions	Learning style
1	Virtual Building Site format, 3D games technology used on the virtual building site scenarios. sound and video	Full Interaction with the game and questions	Visual/ auditory/ tactile/kinaesthetic
2	Flash Format, mostly flash used for simulations for example brick experiment. Sound and video	Interaction with the simulation and the use of questions	Visual/ auditory/ tactile/kinaesthetic
3	Basic Flash format, text with animated graphics, flash animations, sound and video	click on text graphics/text change on click questions Flash quizzes	Visual/ auditory/ tactile/kinaesthetic
4	Basic plus format, text with short animated gif graphics, sound and video	click on text graphics/text change on click questions	Visual/ auditory
5	Basic format, minimal text with graphics	click on text graphics/text change on click questions	visual

### Categories and Suggested Uses

For the E Construction project the two most important features of the Learning Objects are their flexibility and of course the way in which they engage the hard to reach learner. To enable the tutor to make the most use of the Learning Objects they have been designed to fall into one of five different categories according to their features. See table above.

Ways in which E Construction Learning Objects will be used are many and varied as will be demonstrated below. The list has been grouped into three main sections relating to the intended purpose or outcome. These sections are:

#### Resources for blending

used to form a blended approach to college based group teaching and learning activities

#### Resources for individualised learning

used to allow the learner to work individually either at college or at a distance (workplace, learning centre)

#### Resources for promotion

used to promote either the student experience, industry in general or individual companies, education and training providers.

### **Individual class assignments**

As well as interacting with the materials themselves in most cases the learner has the opportunity to undertake self-assessment questions.

### **Group project work**

Learners working together could be assigned a project based task or assignment on the content of individual or series of Learning Objects

### **Revision tools**

With the use of a digital projector tutors preparing for assessment could use content of individual or series of Learning Objects as a revision aid

### **Gathering evidence of competence**

Information gathered as part of the tracking process could be used as evidence of competence or readiness for assessment. For example results of quizzes and activities are recorded against the learner along with the time spent and date; In addition many activities have an option to print results, which could be added to a portfolio.

### **Reference materials**

Students working on a project based task or assignment can use information within the searchable Learning Objects as a source of information.

### **Teaching aids**

By using a digital projector content of the Learning Objects can be used to explain or demonstrate practical or theoretical tasks or concepts.

## **Resources for individualised learning**

- **Individual assignments** Working on their own, as well as interacting with the materials themselves in most cases the learner has the opportunity to undertake self-assessment questions.
- **Private study** Accessing the Learning Objects from home or the workplace allows the student a comparable learning experience to that of the college environment. Students can work on their own.
- **Revision tools** Learners can prepare for assessments using the Learning Objects at home or at work.
- **Gathering evidence of competence** Learners can be given responsibility for collecting evidence of competence using the activities and quizzes found within the Learning Objects.
- **Reference materials** Students working on a project based task or assignment can use information within the searchable Learning Objects as a source of information.
- **External group project work** Learners working together out with the college could be assigned a project based task or assignment on the content of individual or series of Learning Objects.

## **Resources for promotion**

- **Demonstration tools** Learning Objects can be used as part of display stands for exhibitions or events. Attendees can interact with the highly visual content.
- **Introduction/taster for prospective students** Prospective students can try out Learning Objects on their own or in clusters to forms short courses in which they can have exposure to the students' experience.
- **Marketing** The highly visual content can be used in promotional materials and literature.

## **Appendices – To Be Added**

Exemplar Teaching Plans (Based on JISC Effective Practice Template)  
Learning Object List (Extracted from Database)

## Appendix 7 Learning Strategies



### Learning Strategies and Transforming Learning

Paper by Professor Tom Wilson

#### Introduction

The whole thrust of formal education over the last few years has been to move towards independent learning and individualised learning. This shift may not be primarily the result of advances in technology, but of the changes in society. On the one hand the understanding of communities has led to the realisation that investment in communities has to include an investment in learning; on the other hand the recognition that the individual has to accept a measure of responsibility for his/her own learning.

This paper will not address the societal dimension but will reflect a little on two issues:

- The skills needed by tutors to support a variety of learning strategies;
- The place of technology in supporting learning strategies;

The skills of the teacher in a teacher-focused learning environment are probably understood across schools and colleges. Simply to add to those often-well-honed skills presentational skills supported by ICT may not be the answer to supporting learners. The new skill set required in the 21<sup>st</sup> century is already being documented. The issues relating to equipping with those skills all tutors in the public and private sectors are challenging.

At all levels educational institutions are re-assessing their approaches to learning in the light of research findings into how the brain functions. Providing for the learning style of the individual takes into account those findings and is therefore demanding of the practitioner. Technology has a part to play in offering, within the limitations of space, time and budget, opportunity for the individual's learning preferences to be met. In particular the advent of digital broadcasting opens up possibilities that were not within reach a generation ago.

At various levels there have always been learning strategies, largely at national level and, only occasionally, at the level of the individual. At least from the Reformation Scotland has had a national system of education as outlined in the First Book of Discipline of 1560. The statutes, which Parliaments enacted over the intervening centuries did little to shift the education system to delivering learning in ways that suited the particular learning styles of individuals.

Even to the present day Germany has not moved away from its strict apprenticeship system with its roots in the medieval guilds Wagner celebrated in his opera *Meistersinger*. In our own society we have moved from the one-size-fits-all approach to acknowledge that recent research shows clearly the reasons for learners having preferred learning styles. In the drive to increase participation in which we are all engaged, only as we cater for the learner's preferences can we hope to retain them and see them prosper as learners. It is those factors, and not technology alone, that is stimulating the debate about learning strategies.

The advent of powerful PCs has introduced a new dimension into the debate. We should remind ourselves that there have been computers in education since at least 1946 when the

University of Pennsylvania began operating<sup>3</sup>. Since then wild claims have been made that the computer revolution would sweep away all that we once associated with education and training.

One can predict that in a few years millions of schoolchildren will have access to what Philip of Macedon's son Alexander enjoyed as a royal prerogative: the services of a tutor as well-informed and as responsive as Aristotle<sup>4</sup>

Technology has provided the tools to make that happen but it has not come, not only because it is beyond the reach of the public purse but also because it may not be desirable. Social interaction is important to learners, as the House of Commons Education and Skills Committee Report on the UK e-University concluded: "(Learners) overwhelmingly requested a strategy that emphasises 'blended' approaches to learning and teaching—where e-learning via the web or other technologies is augmented by more traditional methods, including classroom sessions, and the use of books and other resources—rather than wholly computer based learning. In promoting blended learning, (learners) requested an approach that is not restricted to the use of technology and emphasised that e-learning is a process, not a product"<sup>5</sup>.

#### Individual Learning Strategies: Enhancing the tutor's skills

The whole thrust of formal education over the last few years has been to move towards independent learning, individualised learning and more recently personalised learning. We speak the language of empowerment; we assert that the learner is centre stage; we insist that the learner takes responsibility for his/her own learning. But has the delivery of education been transformed to meet the needs of the individual? If no, how do we produce that transformation? Once more the answer is not in the technology alone. The answer lies in investing in our tutors. Westminster Institute of Education, part of the Oxford Brookes University, warns that ICT "will not improve the students' learning experience unless the teaching methods are carefully developed"<sup>6</sup>. Few colleges would claim that every lecturer is equipped to support a learning environment where individuals are catered for.

The Westminster report cited above draws attention to "the lack of thought given to the effects of multimedia methods on teaching and learning". It is not too much to suggest that until now many have accepted without empirical evidence that multimedia methods contribute positively to education attainment and that those positive outcomes can be attained by tutors traditionally trained. Until colleges and the providers of teaching qualifications face up to the need to provide our tutors with a new range of skills the full potential of the technology will not be realised.

The range of skills required in staff would include:

- How to specify the objectives in a learning experience at a level of detail that enables the technologist to build a product to meet those objectives;
- How to choose approaches to suit the learning styles of users;
- How to support learners within a managed learning environment.

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<sup>3</sup> Freeman Mark A. and Capper John M., "Educational Innovation: Hype, Heresies and Hope", *ALN Magazine* Volume 3 December 1999.

<sup>4</sup> Suppes, P., "The Uses of Computers in Education", *Scientific American*, 206-208, September 1966.

<sup>5</sup> UK e-University Third Report. London: The Stationery Office Limited, 2005.

[www.parliament.uk/parliamentary\\_committees/education\\_and\\_skills\\_committee.cfm](http://www.parliament.uk/parliamentary_committees/education_and_skills_committee.cfm).

<sup>6</sup> *Times Educational Supplement* 15 September 2000 FE Focus pp. 35-36.

The University of Edinburgh<sup>7</sup> in a review of school records notes “a preponderance of detail on pupils’ behavioural and attitudinal aspects but little on their learning styles, capabilities and teaching needs”. Unquestionably, the balance in record-keeping would need to shift significantly if the use of appropriate learning styles is to contribute to developing confident independent learners. Tutors need to see preferred learning styles as vitally important, and so worthy of recording.

#### Individual Learning Strategies: How Technology can help

The first HMIe report to address the impact of ICT on learning, *The Use of ICT in Learning and Teaching*<sup>8</sup>, asserted that there is now empirical evidence to support the view that, used with discernment, ICT does enhance learning. That Report and subsequent reports from a variety of sources do catalogue good practice. The HMIe Report does not focus on the use of technology in catering for learning styles.

As we have noted, our growing appreciation of multiple intelligences has encouraged schools, colleges and individual lecturers to acknowledge that not all learn in the same way. But most would admit that in their teaching there is little evidence that we have moved any distance beyond acknowledging the challenge. Among the innovative ICT projects in Irish schools is a project E-Mitt: Educating Multiple Intelligences through Technology<sup>9</sup>. Among its aims we should note:

- To blend a Multiple Intelligences approach to teaching and learning with ICT
- To improve the lot of the “system disadvantaged” by teaching to their strengths, thus tackling the issue of early school leaving in a new way;
- To broaden the pedagogical skills;
- To explore alternative ways of assessment.

*Living & Learning in Glasgow*<sup>10</sup> puts the case aptly: “ICT has a central role in providing choice and flexibility and in transforming the delivery and support of learning provision.” More pertinently, the Scottish Parliament’s Enterprise and Lifelong Learning Committee links learning styles and e-learning in its 2002 *Report on Lifelong Learning*; it observes that e-learning is important especially to those “familiar with learning and their own learning styles”. The Joint Report of the Scottish Higher Funding Council and the Scottish Further Education Funding Council<sup>11</sup> observes that “e-learning can enhance the scope for student-centred learning, through customisable access to materials, and enhanced interactivity, allowing choice of routes, learning styles, timing, repetition and self-pacing”. It also places an obligation on providers to take account of learning styles. Clearly, the received wisdom is that, at the design stage, the developer will have considered a number of learning styles in order to cater for a variety of learning styles. A combination of media is needed if we are to provide a learning experience for all learners, that allows choice of materials to match their own pace and preferred style

#### Commonly identified learning styles

Learning styles are variously classified. Becta has provide a readably approach to the classifications in common use<sup>12</sup>. Commonly used taxonomies include styles that might be broadly classified as follows<sup>13</sup>:

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<sup>7</sup> Elizabeth Jordan, E/ Padfield, P. *Evaluation of the SchoolsOutGlasgow.net project*. Edinburgh: University of Edinburgh, 2004.

<sup>8</sup> *The Use of ICT in Learning and Teaching* published Scottish Executive 2000

<sup>9</sup> *Innovative ICT Projects in Irish Schools* published National Centre for Technology in Education, Dublin 2000,

<sup>10</sup> *Living & Learning in Glasgow*, Scottish Enterprise Glasgow, Glasgow 2000.

<sup>11</sup> *Joint SFEFC/SHEFC E-Learning Group: Final Report* (Edinburgh, 2000).

<sup>12</sup> [http://www.becta.org.uk/page\\_documents/industry/advice/learning\\_styles.doc](http://www.becta.org.uk/page_documents/industry/advice/learning_styles.doc).

<sup>13</sup> <http://www.metamath.com/lswb/fourls.htm>.

- **The visual/verbal learning style**, where the learner benefits from textbooks, notes, diagrams and summaries of key points;
- **The visual/nonverbal learning style**, where the learner prefers images, moving or still, charts and the use of colour;
- **The tactile/kinesthetic learning style**, where the learner learns from doing or demonstration or investigation;
- **The auditory/verbal learning style**, where the learner learns by listening, discussion, and debate.

A number of web sites provide critiques of these and other approaches to learning styles<sup>14</sup>. The most succinct of these is in the LT Scotland ICT Masterclass series<sup>15</sup>. It also offers suggested approaches a developer might adopt. Various diagnostic tools are available to assist in identifying a learner's preferred style<sup>16</sup>.

### Summary

The prediction has not yet been fulfilled: millions of learners do not have "access to what Philip of Macedon's son Alexander enjoyed as a royal prerogative: the services of a tutor as well-informed and as responsive as Aristotle"<sup>17</sup>. Some progress has been made to supporting learning strategies that put the individual centre-stage. But much more requires to be done for the tutor and for the learner before generations of Aristotles support generations of Alexanders. An understanding of learning styles would contribute significantly to more responsive colleges.

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Tom Wilson March 2006

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<sup>14</sup> See, for example, <http://www.kn.pacbell.com/wired/fil/pages/listlearningli2.html#cat3>;  
<http://members.shaw.ca/priscillatheroux/styles.html>

<sup>15</sup> [http://www.ltscotland.org.uk/wholeschoolissues/Images/learning\\_styles\\_tcm4-148407.pdf](http://www.ltscotland.org.uk/wholeschoolissues/Images/learning_styles_tcm4-148407.pdf).

<sup>16</sup> See, for example, <http://www.learningstyles.net/>; <http://www.networkpress.co.uk/LSIA.html>

<sup>17</sup> Suppes, P., "The Uses of Computers in Education", *Scientific American*, 206-208, September 1966.



## **Appendix 8**

### **What Transformation Means: The Transformation Process in the E Construction Transformation Project**

#### **Introduction**

The purpose of this paper is to expand and therefore clarify the definition of “transformation” as it appears in the Project Plan.

#### **Transformation aims**

The main aim of the project is to:

“Transform the efficiency, effectiveness and economy of the Scotland-wide college delivery of work-based qualifications and learning at craft level in the construction sector in order to meet skills shortages and gaps and individual learning and tutoring needs”.

The project intends to:

- Transform current built environment education and training, making it flexible, adaptable and sustainable whilst being attractive to and enjoyable for learners, tutors and trainers
- Introduce enhanced interactivity into the learning and teaching experience of individuals to encourage them to develop their own skills for learning and teaching to become increasingly autonomous and lifelong users of e and blended learning resources
- Develop stimulating learning materials especially in respect of areas of the curriculum that are difficult to teach
- Provide learning materials for students who through ill-health or other reasons miss part of a training course
- Provide learners with learning for jobs and career advancement but also an enhanced learning experience
- Provide employers with skilled employees who will help the sustainability and growth of the company
- Assist the industry to end to skills shortages and gaps, thus helping the Scottish economy to grow
- Help FE colleges to sustain and increase the student cohort
- Help FE tutors to have increased job satisfaction and gain enhanced tutoring skills
- Reduce the amount of face to face teaching for Construction Modern Apprentices by 10%

#### **Transforming inter-college communications**

The FE partners in the project’s Consortium Agreement are:

- Moray College, Elgin (lead institution)
- Glasgow Metropolitan College (Project Director’s base)
- North Highland College, Thurso (Project Manager’s base)
- Inverness College
- Aberdeen College

Additional support comes from Edinburgh’s Telford College and Lauder College (Fife)

Given the college locations, the project team faces considerable geographical challenges in delivering the project but this mirrors the challenges of delivering Construction Modern Apprenticeships on a pan-Scotland basis. One of the underlying aims of the project is to demonstrate the effectiveness of digital communications in encouraging effective cooperation and sharing of provision between FE colleges.

### **Transforming college access to e learning provision**

To date, despite the umbrella of Learn Direct and Build, some college construction departments have developed their own e learning provision for construction training, often patchy, incomplete and sometimes of inferior quality. Usually these colleges have been reluctant to share their provision with other colleges and even where they have been willing to share, the poor standards of interoperability have made sharing impossible. Exacerbating this situation is that all the colleges have different levels of e learning expertise and can be using widely different VLE systems.

To transform accessibility, the e learning provision developed by the project will be subject to the highest standards of interoperability and SCORM compliance and available to all colleges through the JORUM and LD&B digital repositories. Furthermore, the project has already developed its own Learning Management System which will be available for use in college, in the workplace, in learndirectscotland centres and on the learner's own pc.

All materials, approaches and associated assessments and guidance will be made available to colleges across the Scottish network and the development of the materials and methods will be posted on the LD&B and project web sites as the project develops.

### **Transforming FE provision and delivery systems to meet industry needs**

The construction industry is one of the largest sectors in Scotland with a Scottish workforce of over 125,000, equating with one in fourteen of the total Scottish workforce, contributing 10% to the Scottish GDP. It has one of the largest Scottish take-ups of SVQs and Modern Apprentices - approximately 10,000 Modern Apprentices, all undergoing some of their training in Scotland's FE Colleges.

Although the industry has some very large companies in Scotland, out of the total of 6,000 Scottish companies, the vast majority (99%) employ less than 10 employees. 50% of all Scottish construction firms operate as sole traders.

There is a shortage of craft workers, project managers etc, the industry has an ageing workforce and much of the workforce has no qualifications, whilst many built environment workers lack essential core skills. Traditional skills associated with the use of original materials are being lost, making the tasks of conservation, restoration and repair and maintenance more difficult.

In many geographical areas, training provision is in short supply or oversubscribed. Even worse, many employers have scant knowledge of what is available and are unsure what they actually need. Most companies report some difficulties with training provision or barriers to training. Moreover, the majority of employers see the location, timing and cost of training provision as barriers to training.

The project is supporting learner transition – within and across educational institutions and into and within employment. To encourage this process the project is working with employers and also in partnership with other organisations in the Learn Direct and Build initiative which focus mainly, or in part, on learning for work, such as:

- CITB ConstructionSkills
- Learndirectscotland
- Careers Scotland
- SQA
- Historic Scotland
- Highlands and Islands Enterprise
- Scottish Enterprise Networks

### **Transformation in learning for work**

As the project centres on Construction Modern Apprentices who are all of employed status, this means the focus must be on learning for work and future career and economic advancement. However, the project is also concerned with enhancing and transforming the learning experience for learners and the teaching experience for tutors in Scottish FE Construction departments. The project team contends that the keys to this transformation success are in developing appropriate, innovative, accessible and enjoyable, sometimes game based e learning content of consistently high quality set within an exciting but realistic virtual construction site and a virtual built environment landscape.

### **Transformation through digital content**

The project team is developing e content to provide the underpinning knowledge and understanding for level 2 and 3 SVQs that comprise the Modern Apprenticeships in:

- Brickwork
- Carpentry and Joinery
- Painting and Decorating
- Stonework
- Roofing and Tiling (if circumstances allow)

In doing this, the project is attempting to use e learning to reduce the time allowance for face-to-face contact between tutor and learner and allow more of the learning to occur in the workplace and at home. This is particularly important in the Highlands and Islands, where Modern Apprentices might work and live a long way from the nearest FE College and employers worry about their Apprentices being away from base.

### **Transforming the learning and tutoring experiences**

These developments do not necessarily lessen the time input for tutors but it transforms their role from an emphasis on class teaching to on-line support and mentoring therefore the project is working closely with a sister project TESEP which is developing new pedagogies and staff development models to enhance and transform the learning and teaching experiences.

Tutors will have to be persuaded to relinquish their present methods of classroom teaching and reliance on paper based material. Learners will have to be encouraged to develop more autonomy and ownership of their own learning. Employers will have to be convinced of the efficacy of the transformation in learning and teaching approaches and delivery modes.

The project team intends to run focus groups to identify learner and tutor needs and subsequently to access and/or develop support material for both tutors and learners. Similarly, the project team will cooperate with its partners such as SQA, CITB-Construction Skills and the Enterprise Networks in connecting with employers.

### **Transforming the assessment process**

In achieving the transformation of learning content and delivery, it is also necessary to adopt and deliver new e assessment approaches. The project team is already working with SQA and intends to work with the sister project REAP on the transformation of the assessment process.

### **Measuring transformation**

#### Quantitative data

The actual decrease in face-to-face contact between MA learner and tutor is hoped to be as much as 10%. This has necessitated some research into the current pattern of activity in order to establish a baseline against which progress can be measured. Some quantitative data has been researched with the colleges in the project. A post project survey will be carried out so that the extent of the transformation can be measured.

#### Qualitative data

A survey is being carried out by email and telephone with all Scottish FE construction faculties and departments in order to gain some qualitative data on the current use of e

learning, expertise in its use and the attitudes of tutors and students. This survey is for a short report to be produced by the end of the year. Student and tutor focus groups are also being run to collect anecdotal evidence of the current position. As with the quantitative data, similar post project activities will be carried out so that the extent of the transformation can be assessed.

**Conclusion: Transforming construction education and training**

By producing and introducing e-learning packages, initially for four craft areas, supported by new developments in pedagogy, the project is intended to transform the nature of the learning process for both students and tutors by introducing a blend of innovative, high quality and appropriate learning experiences to underpin the delivery and achievement of Modern Apprenticeships and the integral SVQ qualifications. Tutors will be trained and encouraged to tap into the full potential of new learning and teaching techniques. Thus the project will transform the delivery of Scottish construction education and training as a whole.

Most of all, the project will place the learner at the heart of development by taking expert advice on pedagogy, VLEs and content development such that the project outputs are of the highest quality. Learning is the vital element. The e learning packages and systems that are to be developed in the context of this project are not just for distance or remote learning, but will form part of a conscious choice of the best and most appropriate ways of promoting effective learning.

The new approach will place a greater focus on developing autonomy in the learning process and thus will enhance the learner's capacity to learn and hence his or her employability and career progression prospects. It will provide learners with experience of lifelong learning to equip them to adopt lifelong learning habits and to use e learning throughout their careers. In turn this will demonstrate the important role the colleges have in creating meaningful learning opportunities and lead to an increase in construction learner numbers.

**Jenny Kellie**

**Project Director ECTP**

**May 2006**



## Appendix 9 ECTP Evaluation Strategy

### Introduction

The project team has held several development and planning sessions to examine how best to evaluate the success (or otherwise) of the project. This work included an examination of learning strategies (see separate paper from Professor Wilson) and consideration of what “transformation” means in the context of the project (see separate paper from Jenny Kellie).

The context of the project is the need to support Scotland’s economy through the growth of the Scottish construction sector and the need to resolve skills shortages and gaps.

The overall aim of the project is to produce e learning content in order to transform the efficiency, effectiveness and economy of the Scotland-wide college delivery of work-based qualifications and learning for construction Modern Apprentices in the craft areas of:

- Brickwork
- Carpentry and Joinery
- Painting and Decorating
- Roofing and Tiling
- Stonework
- Heritage Conservation

Central to the project is the underpinning objective of transforming individual learning and teaching experiences, giving the learner more control and responsibility as well as encouraging the tutor towards an approach where he or she performs a supporting and enabling role to complement more traditional methods of delivery.

After the work was done on revising the project's definition of transformation, the team recognised that the original evaluation statement in the project plan was too narrow. This narrow statement read as follows:

*“There are two levels of evaluation within this project and each is both formative and summative. The achievement of the individual work packages will be closely monitored by the PMG. The formative evaluation will proceed in parallel with the development work and will feed back modifications to be incorporated in future work. The summative evaluation will follow the piloting and validation trials and will be concerned with the achievement of the project objectives, particularly the effects gained by transforming the learning process. As part of the evaluation process feedback will be obtained from students and tutors by interviews, observation and peer review, to ascertain whether they feel that their learning experience has been enhanced.”*

The Core Team decided to create a fuller and more complex evaluation strategy to look at a wider range of transformation and evaluation issues such as:

- Scotland PLC, the economy, a smart successful Scotland, the need for an enlarged and fully competent construction workforce
- Employers, especially small company growth and sustainability
- CITB-Construction Skills and its skills development responsibilities
- Meeting SQA assessment, verification and certification requirements

- Colleges – institutional benefits e.g. cost, quality, reputation, retention, student and staff morale
- Modern Apprenticeships – National Programme and Enterprise Network requirements, quality of learning experience, economy of delivery, achievement of SVQ 3, links between college and workplace
- Effectiveness of project plans and strategies to meet project targets.
- Quality of products and their fitness for purpose.
- 

### **Evaluating “Hard” objectives**

The project has an objective of reducing face-to-face teaching time by 10%. This is not to necessarily to shorten the time frame for tutor responsibility for student learning but rather to:

- Give the students a more flexible programme in which they can learn at home or in the work place
- Allow the tutors more time to develop their approaches to e learning and their skills in delivering it.

The project team has gathered baseline data that gives the current number of face-to-face contact hours. Towards the end of the project, further data will be gathered to calculate whether the 10% saving is likely to be achieved after the completion of the project. Subsequently, LD&B will continue to gather appropriate data. It is fortunate that LD&B will continue to exist to ensure the sustainability of the project after its formal completion date.

### **Evaluating “Broad” objectives**

These broad objectives include:

- Growing the Scottish economy through the up-skilling the construction sector: this objective can only be evaluated through Scottish Executive, FutureSkills Scotland and CITB- Construction Skills research some time after the end of the project
- Benefits to employers including small company growth, increased profitability etc.: this objective can only be evaluated through labour market intelligence research by FutureSkills Scotland and CITB- Construction Skills some time after the end of the project
- Modern Apprentices achievement of SVQ3 rates: CITB-Construction Skills has volunteered to evaluate this for 5 consecutive years after the end of the project.
- 
- 

### **Evaluating “Partner” objectives**

- Partner related objectives include:
  - 
  - Meeting SQA assessment, verification and certification requirements: SQA is providing on-going advice and has volunteered to produce an end of project report to identify how far the project has complied with SQA requirements
  - Modern Apprenticeships; meeting National Programme and Enterprise Network requirements: the team will hold structured interviews with SE and HIE at the end of the project to assess whether and how far these requirements have been met
  - CITB-Construction Skills; assisting with its skills development responsibilities: CITB is providing on-going advice and has volunteered to produce an end of project report to identify how the project has helped it to meet its aims
  - Increased links between college and employers: the team will deliver structured interviews towards the end of the project to see if and how much the interaction has increased.
  -
- Evaluating college institutional objectives
- College objectives include:

- Cost benefits
- Improvements to staff and student morale
- Retention of staff and students
- Enhanced retention and recruitment of staff and students

Any benefits are only likely to be obvious some time after the end of the project so LD&B will survey colleges on these issues 2 years after the completion of the project.

#### **Evaluating the transformation of inter-college communications**

Communication between the partner colleges and the 2 supporting colleges (Lauder and ETC) has already improved dramatically over the last 9 months. Similarly communication between the SFC Transformation project colleges is growing in effectiveness through the JISC meetings and the Project Managers Group. However the project must examine the interaction across the whole HE and FE network: the project team is currently looking at evaluation techniques such as which and how many colleges log on to the LD&B web site in order to comment on the project etc.

#### **Evaluating the transformation of college access to LD&B and ECTP e learning provision**

The growth in access to ECTP e learning provision is easily monitored through the project and LD&B web sites. The project team will maintain records of all college access to the ECTP materials.

#### **Evaluating project management objectives**

The project team might like to see an evaluation of the effectiveness or otherwise of its project plans and strategies e.g. Risk Management but in fact the successful completion of the project will provide evidence that plans and strategies have worked effectively.

#### **Evaluating the transformation of tutor skills and attitudes**

The project team is currently gathering data on tutor skills and attitudes in relation to e learning for construction. Towards the end of the project, the team will issue a second questionnaire and undertake structured interviews in order to establish the level of transformation. Materials produced by the TESEP project will be very helpful. Subsequent surveys will be undertaken by LD&B as it is expected that really measurable transformation will take some time to develop after the project finishes.

#### **Evaluating the transformation of learner skills and attitudes**

The project team is currently gathering data on learner skills and attitudes in relation to e learning for construction. Towards the end of the project, the team will run focus groups and undertake structured interviews in order to establish the level of transformation. Materials produced by the TESEP project will be very helpful. Subsequent surveys will be undertaken by LD&B.

#### **Evaluating the transformation of support staff skills and attitudes**

The project team is currently gathering data on the skills and attitudes of support staff in relation to e learning for construction. Towards the end of the project, the team will issue a second questionnaire and undertake structured interviews in order to establish the level of transformation. Subsequent surveys will be undertaken by LD&B.

#### **Video evidence**

The project team will collect video evidence of structured interviews and focus groups. This will be useful for evaluation purposes but it is expected that the video material can also be used for producing a promotional DVD.

#### **Quality of products and their fitness for purpose**

A second tier of project staff is currently being recruited to provide formative evaluation of the development work as it is being produce. All products will be tested and trialled with students and tutors to evaluate their effectiveness and fitness for purpose. Evidence will also be gathered through a series of road shows with employers and LD&B partners.

**Jenny Kellie**  
**Project Director**  
**June 2006**

## **Appendix 10**

### **Draft Consortium Agreement**

#### 1 Purpose

##### 1.1

The purpose of this consortium agreement is to specify the terms and conditions and responsibilities under which the partner institutions participating in the E Lifelong Learning for Construction Managers Project funded by JISC, will operate to ensure that the Project aims and objectives are met and Project outcomes are delivered.

##### 1.2

The vision and aims of the Project are summarised in the Project Plan

#### 2 Membership

##### 2.1

The partner institutions participating in the project are:

- University of East London (UEL) - Lead Institution
- UHI Millennium Institute
- Glasgow Metropolitan College
- North Highland College UHI
- Moray College UHI
- Lewisham College
- CITB-Construction Skills

#### 3 Partner Institution Responsibilities

##### 3.1

UEL, as Lead Institution, will assign a member of their Senior Management Team as Project Leader, with a joint Project Leader appointed by Glasgow Metropolitan College. These officers will act respectively as Chair and Depute Chair of a Project Management Group and Expert Advisory Group (PMG). The Project Leaders will appoint a Project Director who will serve the PMG and oversee the implementation of the project. The PMG will comprise representatives from each partner institution and from other relevant support agencies that will ensure that the conditions of funding set by JISC are met, agree Project plans and/or revisions to project plans, oversee budget allocations and ensure that the outcomes and experiences transfer to wider networks and partnerships, putting sustainability plans in place that ensure the work started during the Project is progressed collaboratively by the partner institutions beyond the life of the Project. The PMG will agree project reports and finance returns submitted to JISC.

##### 3.2

The Project Director will be responsible for overseeing the Project and ensuring that the strategic vision, aims and objectives are met. The Project Director will strategically direct the Project in accordance with Project plans and objectives and assist the Project Leaders to assign top-level budgets in accordance with budget proposals agreed by the Project Management Group. The Project Director will report to the Project Leaders and will also be responsible for liaising with the Learn Direct and Build Initiative.

##### 3.3

The PMG will appoint a Project Manager, Subject Coordinators, and other project staff as outlined in the Project Plan. The PMG will also contract with a commercial e learning developer through UEL. The Project Manager and other core members of the Project Team will report to the Project Director and the Project Management Group but the Project Manager will be responsible for managing the day-to-day activities of the Project Team.

##### 3.4

Glasgow Metropolitan College will make available a Project office where the Project Director, and other members of the Project Team can be based. North Highland College UHI will provide accommodation for the Project Manager and her team.

3.5

UEL will undertake all administrative duties associated with managing the Project, contracting with third parties and financial budgeting and control. This will be done in line with UEL's policies and procedures.

3.6

Project timescales and Project Workpackage specifications are outlined in the Project Plan which must be agreed with the partner organisations before this agreement is signed. Any fees payable shall be agreed in writing between UEL and each partner and/or service provider. Any adjustments to the timescales, Workpackage specifications and fees payable agreed by the Project Management Group shall be communicated in writing to the other partners/service providers.

3.7

UEL will distribute funds to partner institutions and/or service providers in accordance with a payment schedule and/or contract agreed by the Project Management Group subject to: Receipt of funds from JISC in accordance with funding arrangements stated in the JISC funding award letter

Individual partner institutions and/or service providers delivering Workpackages and Project outcomes to the satisfaction of the Project Management Group.

3.8

The Project Director, working with the Project Manager will be responsible for co-ordinating the preparation of reports for JISC and the evaluators in accordance with reporting guidelines.

3.9

Each partner institution is required to nominate a representative to the Project Management Group.

3.10

Where relevant, the detailed responsibilities of each partner will be specified in the Project Plan and Workpackage specifications. These specifications will be discussed and agreed by the Project Management Group prior to implementation.

3.11

The detailed responsibilities are likely in some cases to include seconding a member of staff to act as a Subject Coordinator for up to one day each week with replacement costs to be funded from the project and in all cases to provide:

- Access to any relevant existing teaching materials
- Representation on the Project Management Group which meets quarterly.

3.12

It is the responsibility of each institution to ensure that the:

- Staff assigned to deliver Workpackages are suitably qualified, skilled and experienced to undertake the work
- Staff assigned to the Project understand their commitment and responsibilities to the Project and attend relevant Project Team Meetings as required by the Project Manager. This attendance will come out of the one day per week secondment agreement
- Workpackages that any member of their staff is responsible for are delivered to the timescales set in Project Plans and Workpackage specifications.

3.13

It is also the responsibility of each partner institution to ensure that they evidence any "Contributions in kind" to the Project for audit purposes.

#### 4 Quality Standards, Quality Assurance and Quality Control

4.1

It is the responsibility of the Project Manager to ensure that the Project Team members understand and comply with any quality standards stipulated in the Project Plan.

#### 5 Failure to Deliver Workpackages

5.1

The Project Manager is required to report to the Project Director and the Project Management Group on all Project delays and situations where Workpackages miss

deadlines or fail to deliver on agreed outcomes.

#### 5.2

It is the responsibility of the Project Management Group to consider Project delays and other deviations from agreed work plans and agree the corrective action necessary which the Project Manager will then implement. A delay would be considered serious if late delivery of one Workpackage impacted on the delivery of another Workpackage or achievement of the overall Project or if appropriate corrective action cannot be implemented to resolve the delay.

### 6 Disputes

#### 6.1

Any disputes arising between Project partners will be addressed by the Project Leaders, assisted by the Project Director in the first instance. If the dispute cannot be resolved by this process, assistance can be sought from the Project Management Group or the contact person at the JISC.

#### 6.2

In situations where:

- A partner institution consistently fails to deliver to agreed timescales and work plans
- Disputes cannot be resolved

the Lead Institution reserves the right to terminate this agreement with any partner institution by giving one month's notice to the partner institution's nominated Project Management Group representatives. Changes to the Project partners must be communicated in writing to JISC.

#### 6.3

In situations where the partner institution consistently fails to deliver on its responsibilities, the partners have the right to escalate the situation to the Principal of the lead institution in the first instance for resolution. In instances, where the dispute cannot be resolved by the Lead Institution's Principal, partners have the right to escalate the problem to JISC.

#### 6.4

A partner institution is entitled to withdraw from the Project by giving one month's notice to the Project Director.

#### 6.5

UEL, as Lead Institution, will report any changes to the Project or in the partnership to JISC.

#### 6.6

Where a partner institution's participation in the Project has been terminated, they shall not be entitled to draw down any funds for work not yet completed. The payment terms will be defined in the Workpackages and payment schedule.

### 7 Legal Obligations and Liability

#### 7.1

All partner institutions should effect such insurance cover as is necessary to comply with all statutory obligations including those obligations relating to employer liability, public liability and health and safety within the workplace.

#### 7.2

The partner institutions will not be liable for, and will not be held to be in breach of this Agreement, because of the acts or omissions of any third party. Each partner warrants that it will be responsible for the actions of its employees, agents or others under its direct control in carrying out the Project and will ensure that it has adequate insurance cover in respect of its potential liability. Each partner agrees to fully indemnify, keep indemnified and hold harmless the other, its employees and agents against any and all loss, liabilities, claims or expenses made or brought against the indemnified party due to the indemnifying party's negligence or wilfully wrong act or omission, or those of its employees or agents or those under its direct control. No party will be responsible to the other parties for any consequential losses.

Liabilities to other parties will be capped at the limit of the value of the relevant Workpackage.

#### 7.3

Subject to Section 6 and the succeeding provisions of this Section, the partner institutions shall not be liable under this Agreement for any breach of this Agreement arising by reason of war, threat of war, riot, civil strife, industrial dispute, terrorist activity, natural or nuclear disaster, fire or seriously adverse weather conditions or any occurrence beyond its

reasonable control, hereinafter referred to as “Force Majeure”. In the event of Force Majeure, the party that would otherwise be in breach of this Agreement shall use its reasonable endeavours to minimise such breach at the earliest opportunity, and the time for performance of that obligation shall be extended accordingly. In the event of Force Majeure, the affected party shall give to the other party within 10 working days of such event, notice of the expected effects thereof and estimate the extent, if any, of the expected delay in the performance of any obligations under this Agreement resulting there from.

## 8 Confidentiality

### 8.1

The partner institutions agree to keep confidential all material disclosed by one party to the other under or in performance of this Agreement which (if disclosed in any physical form) is marked as confidential, or (if communicated orally, visually or in other intangible form) is designed orally or otherwise at the time of disclosure (or within fourteen days thereafter) as confidential, or in either case (if not so marked or designated) constitutes material which would normally be understood or considered confidential and reasonably expected by the disclosing party to be treated as such including commercial and financial information relating to the Project and this Agreement.

### 8.2

The partner institutions agree to use all reasonable endeavours to ensure that the terms of this Section are observed by their employees, officers, consultants, agents or any other representative or party retained by them in relation to the Project.

### 8.3

On expiry of the term of this Agreement or in the event that provisions for early termination of this Agreement are invoked under Section 5 of this Agreement, the partner institutions will return to the other party any record, documents or other material or information relating to the other party’s systems, procedures and activities when requested to do so.

## 9 Intellectual Property Rights

### 9.1

It is the responsibility of all partner institutions to ensure that all material and products created under the Project are made available to JISC (and through JISC to the wider HE and FE communities in the UK) and the Learn Direct and Build Initiative.

### 9.2

It is the responsibility of all partner institutions to ensure that any material and products produced in this Project does not infringe copyright or other intellectual property rights held by third parties. For this to be achieved, the Project Manager will ensure that clear permission is acquired before copyright material belonging to a third party is included in any materials and products produced in this Project.

### 9.3

Any materials produced as a deliverable of this Project will remain the intellectual property of the partner institutions and Learn Direct and Build partners. For avoidance of doubt, any background intellectual property brought to the project shall remain the property of the party introducing such background intellectual property.

### 9.4

Partner institutions agree to provide the other party with a non-exclusive royalty free licence to use of any materials created solely by them to support the delivery of the Project for the duration of this Agreement. The use by partner institutions of all materials supplied by the other party in connection with the Project is restricted exclusively to the Programme covered by this Agreement unless agreement of both parties is secured in writing.

### 9.5

Partner institutions agree to permit the other to reproduce all materials supplied by the other party in connection with the Project, in respect of which Intellectual Property Rights rest with such party for use in connection with the Programme, providing that all existing references to the originating party being the source of the material remain clearly visible on the reproduced material.

9.6

Should any party wish to exploit any of the deliverables where they would require access or use of another party's IP created during the Agreement, then this would be the basis for a separate agreement to be negotiated in good faith between the parties.

10 Governing Law

10.1

The agreement will be governed by the laws of England & Wales and Scotland.

**Signatures**

**1.Signed for Lead Institution (UEL)**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Designation: \_\_\_\_\_

**2.Signed for Partner Institution (Glasgow Metropolitan College)**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Designation: \_\_\_\_\_

**3.Signed for Partner Institution (UHI Millenium Institute)**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Designation: \_\_\_\_\_

**4.Signed for Partner Institution (North Highland College UHI)**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Designation: \_\_\_\_\_

**5.Signed for Partner Institution (Moray College UHI)**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Designation: \_\_\_\_\_

**6.Signed for Partner Institution (Lewisham College)**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Designation: \_\_\_\_\_

**7.Signed for Partner Institution (CITB-Construction Skills)**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Name: \_\_\_\_\_ Designation: \_\_\_\_\_