

SKILLS TRAINING IN SCOTLAND TRADITION AND INNOVATION

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CONSERVATION DIRECTORATE



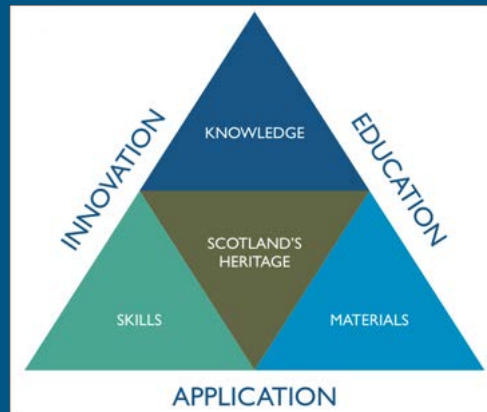
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**WE ARE THE
LEAD PUBLIC
BODY FOR
SCOTLAND'S
HISTORIC
ENVIRONMENT.**



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Knowledge, skills and materials underpin the stewardship of Scotland's heritage.



Innovation, education and application are how we achieve it.



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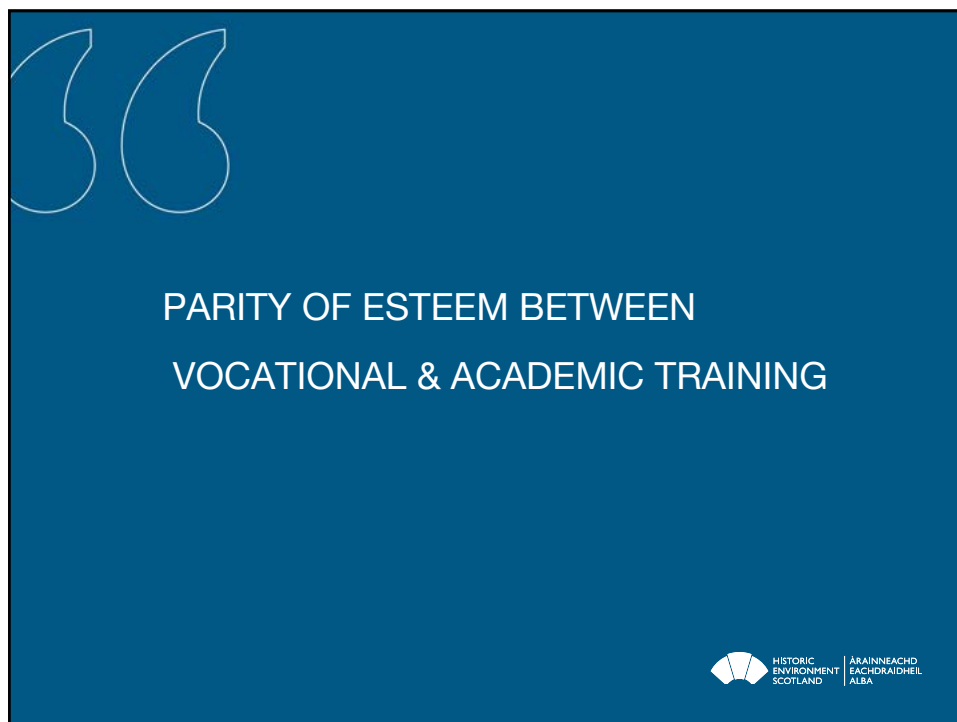
WE ARE IN A WAR FOR TALENT



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Skills Drivers

- Significant increase in tourism (heritage tourism)
- Policy agenda for improving and widening access to heritage assets
- Enhancing the overall visitor experience, including technological and digital transformation
- Climate change affecting the condition of heritage buildings
- Increased commercial focus for heritage organisations requiring a diversification of skills

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Skills Challenges

Success will require a focus on:

- Raising awareness, appreciation, and development of traditional craft skills
- Maintaining the specialist technical skills that underpin the historic environment sector
- Continual promotion of professional skillsets
- Vocational training and learning
- New (and changes in) technical skills and practices arising from the ongoing development of new technologies, approaches, products, materials
- Wider underpinning/ supporting skills needed by, but not unique to, the historic environment sector.



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Future Demand

Core technical/professional skills:

- Stonemasonry and roofing
- Shortages in roles such as:
 - Traditional joiners
 - Lime plasterers
 - Surveyors
- An increase in demand for skills for resilience & growth
 - ICT and digital
 - Leadership and management
 - Business and enterprise
 - Customer service skills
 - Marketing and communication
 - Advocacy
 - Creativity and co-production



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The Sector needs to:

- Address the perceived image as being “old-fashioned” among young people, and faces stiff competition from other sectors
- Demystify the historic environment sector for young people as many feel that it is “not for them”. Action is required to help make this sector a career of choice, and raise awareness of the range of opportunities available
- Widen the talent pool and address gender inequality
- More vocational skills learning into courses to support the readiness of new entrants (technical/professional and broader skillsets required) & help manage the expectations of those coming into the sector at entry level



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The Sector needs to:

- widen entry-level routes and pathways into the sector and educate industry as to the most appropriate routes for the roles
- address the decline in education and training provision of specialist skills
- upskill and develop the existing workforce to meet employer demand
- engage with the whole sector (including hard to reach micro/ small businesses) to support workforce development
- identify qualifications/ accredited training for volunteers to ensure consistency in the workforce and recognised career progression.



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Skills Investment Action Plan:

Ensure that the operation and growth of the historic environment is not constrained by a lack of suitable and appropriate talent.

- Improve awareness and understanding of employment opportunities
- Ensure that all supporting sectors have a good understanding and awareness of the historic environment
- Promote equality and diversity in the sector
- Act as a catalyst for increased delivery within related actions in construction, creative industries and tourism Skills Investment Plans.




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Priority Areas:

1. Engaging the sector in skills and innovation:
 - a. Improve awareness and understanding of skills challenges and solutions
 - b. Widening employer engagement in skills
 - c. Promoting innovation
2. Attracting future talent and improving access:
 - a. Promote the sector as an attractive place to work
 - b. Promote pathways into the sector for all
 - c. Developing apprenticeships and enhancing further and higher education provision
 - d. Develop volunteer networks for young people and offer work placements
3. Workforce development:
 - a. Expand traditional skills and specialist provision
 - b. Develop and enhance CPD provision and availability nationally
 - c. Increasing skills and qualifications of volunteers



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Built Heritage Investment Plan: Suggestions for Stimulating Demand

Demonstrate the value of repair and maintenance, notably the longer-term economic value of addressing issues proactively rather than putting off work. The Traditional Building Health Check Scheme has proven the link between culture change and demand for skilled professionals and craftspeople.



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Built Heritage Investment Plan: Suggestions for Stimulating Demand

Improve public awareness of the value of using the right skills, whether craft, technical or professional, for the right job, in particular by showing that repairs of traditional (pre-1919) buildings using the right skills and materials can be very long-lasting and therefore represent good value. The work of Scottish Traditional Building Forum and its regional members, is an example of this being undertaken by the sector, for the sector.



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Built Heritage Investment Plan: Suggestions for Stimulating Demand

Enforce an evidence requirement of appropriate, training, knowledge and skills at craft, technical, professional levels, for conservation, repair & maintenance, and energy efficiency retrofit of traditional (pre-1919) buildings, through use of proof of competency and accreditation schemes as part of the procurement process. Appropriate schemes already exist but need to be made mandatory through changes to procurement policy and compliance enforced



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THE
ENGINE SHED
AN SEADA EINNSEIN

SCOTLAND'S
BUILDING
CONSERVATION
CENTRE



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The Engine shed: What is it?



Vision: To create a world class conservation hub which raises conservation standards in skills and training and inspires a new generation of young people to get involved

A creative, buzzy, inspiring space with loads of fascinating activities, exhibitions and events where people can experience conservation in action. A melting pot for exchanging ideas and fostering collaboration.

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THE SCOTTISH CREDIT AND QUALIFICATIONS FRAMEWORK

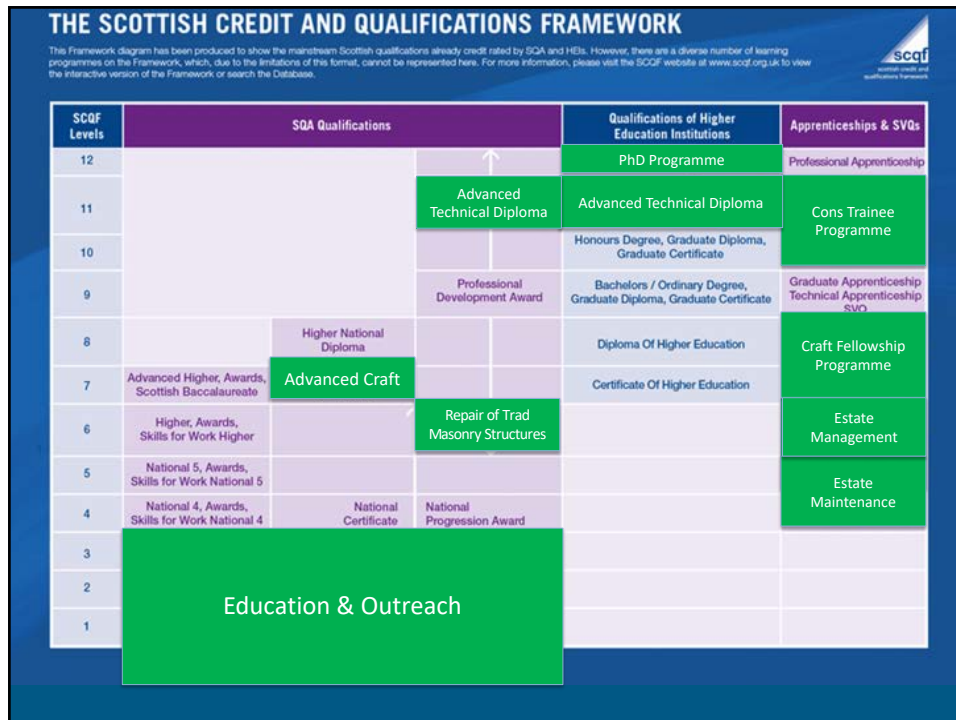
This Framework diagram has been produced to show the mainstream Scottish qualifications already credit rated by SQA and HEIs. However, there are a diverse number of learning programmes on the Framework, which, due to the limitations of this format, cannot be represented here. For more information, please visit the SCQF website at www.scqf.org.uk to view the interactive version of the Framework or search the Database.



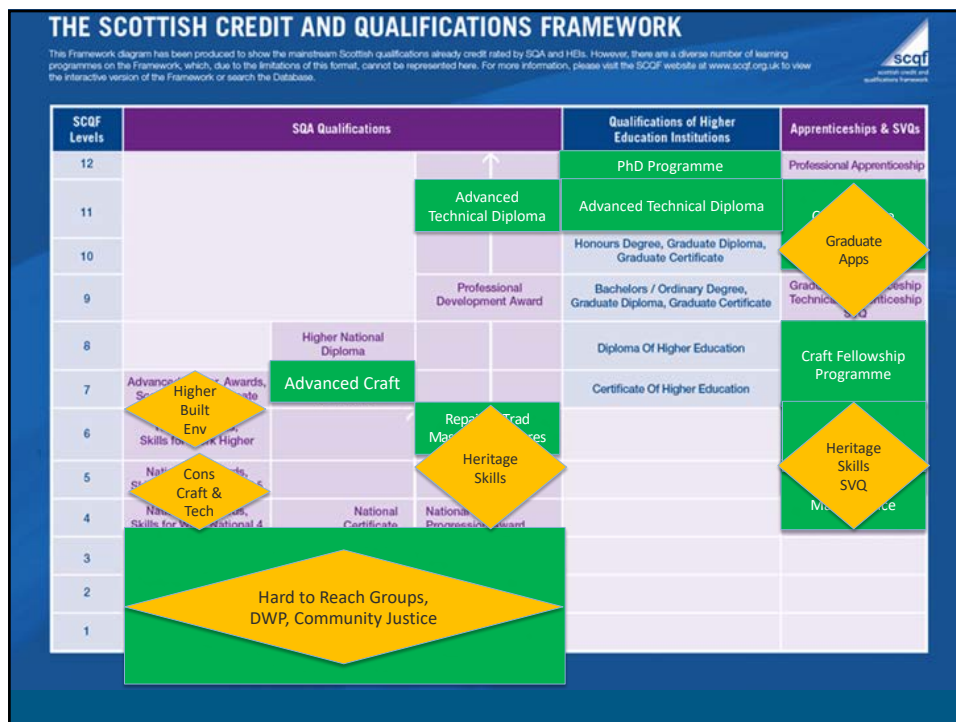
SCQF Levels	SQA Qualifications		Qualifications of Higher Education Institutions	Apprenticeships & SVQs
12			Doctoral Degree	Professional Apprenticeship
11			Masters Degree, Integrated Masters Degree, Post Graduate Diploma, Post Graduate Certificate	Graduate Apprenticeship Professional Apprenticeship SVQ
10			Honours Degree, Graduate Diploma, Graduate Certificate	Graduate Apprenticeship Professional Apprenticeship
9		Professional Development Award	Bachelors / Ordinary Degree, Graduate Diploma, Graduate Certificate	Graduate Apprenticeship Technical Apprenticeship SVQ
8		Higher National Diploma	Diploma Of Higher Education	Higher Apprenticeship Technical Apprenticeship SVQ
7	Advanced Higher, Awards, Scottish Baccalaureate	Higher National Certificate	Certificate Of Higher Education	Modern Apprenticeship SVQ
6	Higher, Awards, Skills for Work Higher			Modern Apprenticeship Foundation Apprenticeship SVQ
5	National 5, Awards, Skills for Work National 5			Modern Apprenticeship SVQ
4	National 4, Awards, Skills for Work National 4	National Certificate	National Progression Award	SVQ
3	National 3, Awards, Skills for Work National 3			
2	National 2, Awards			
1	National 1, Awards			

<https://scqf.org.uk/the-framework/about-the-framework/>

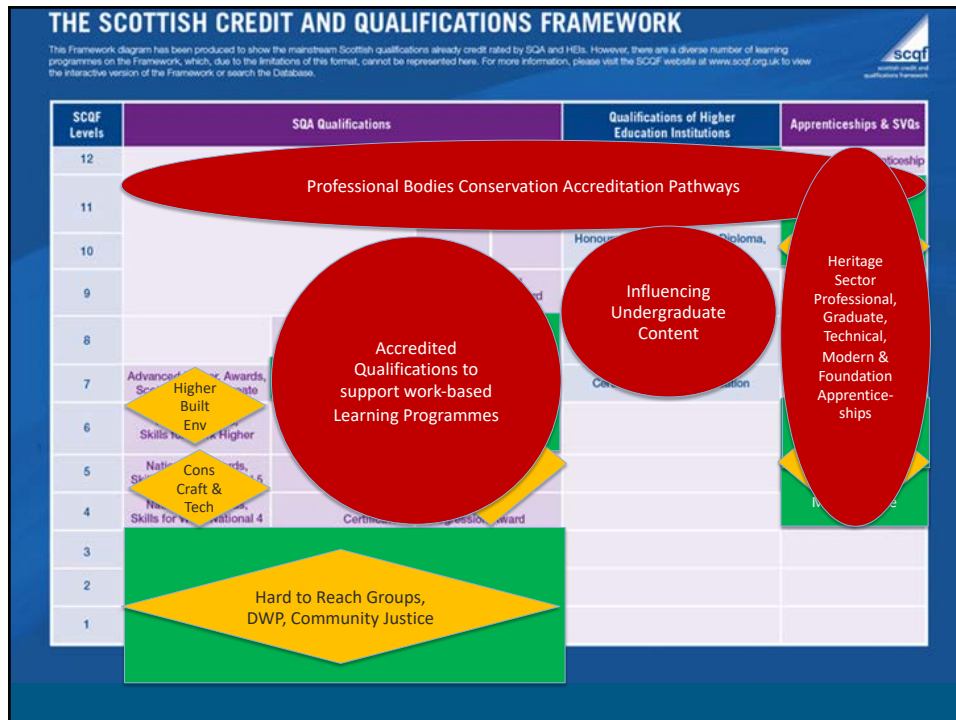
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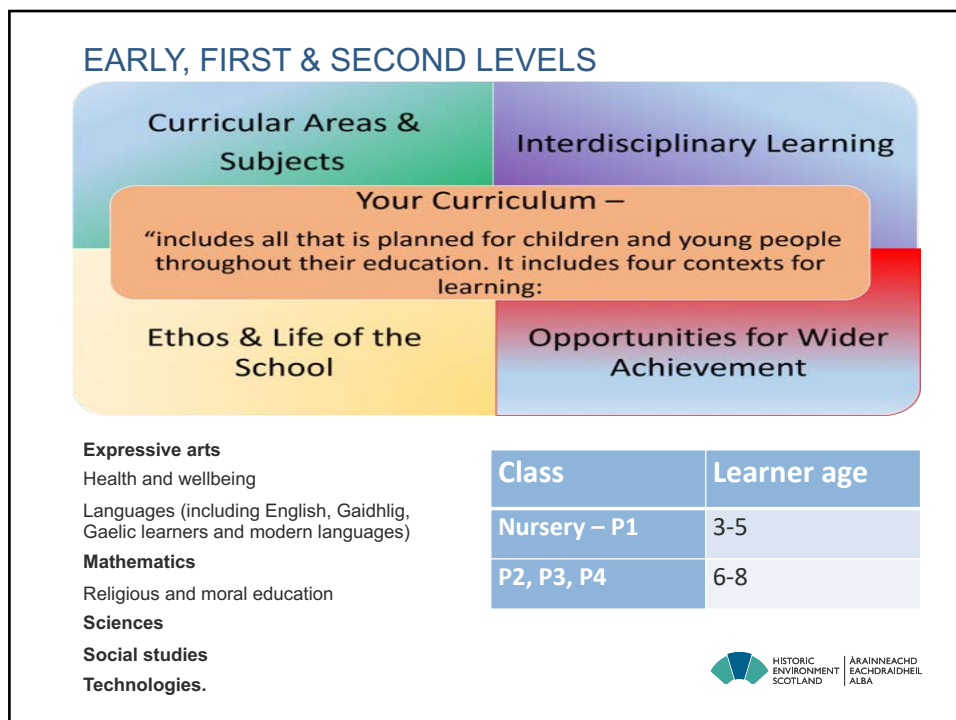
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EARLY YEARS WORKSHOPS

NURSERY – P1, AGES 3-5 YEARS

Familiar, age-appropriate stories to find out about buildings, materials, skills

ACTIVITY PLAN
Bricks – Hansel and Gretel
CORE OBJECTIVES
The core objectives of the Engine Shed are

- To raise conservation standards.
- To support a new type of heritage economy.
- To engage and enthuse young people.
- To be a facilitating hub for the sector.
- To promote the benefits of traditional buildings, materials and skills.
- To create a world class building conservation research and education facility.

OVERVIEW
Through the use of the traditional tale 'Hansel and Gretel' children will be

ACTIVITY PLAN
Bridges – The Three Billy Goats Gruff
CORE OBJECTIVES
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OVERVIEW
Through the use of the traditional tale 'The Three Billy Goats Gruff' children will be

ACTIVITY PLAN
Building Materials – The Three Little Pigs
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OVERVIEW
Through the use of the traditional tale 'The Three Little Pigs' children will be

ACTIVITY PLAN
Shapes in Buildings – Jack and the Beanstalk
CORE OBJECTIVES
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- To create a world class building conservation research and education facility.

OVERVIEW
Through the use of the traditional tale of 'Jack and the Beanstalk' children will be

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FIRST LEVEL WORKSHOPS

P2 – P4, AGES 6 – 8 YEARS

ACTIVITY PLAN
Bridge Builder
CORE OBJECTIVES
The core objectives of the Engine Shed are

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- To promote the benefits of traditional buildings, materials and skills.
- To create a world class building conservation research and education facility.

OVERVIEW
This workshop will introduce bridges as engineering structures to pupils. Learners

ACTIVITY PLAN
Robots, Programming and VR Technology
CORE OBJECTIVES
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- To be a facilitating hub for the sector.
- To promote the benefits of traditional buildings, materials and skills.
- To create a world class building conservation research and education facility.

OVERVIEW
This workshop will introduce robots, programming and VR technology and their uses

ACTIVITY PLAN
Material Properties
CORE OBJECTIVES
The core objectives of the Engine Shed are

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- To promote the benefits of traditional buildings, materials and skills.
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OVERVIEW
Through active investigation pupils will be introduced to the use of materials in

ACTIVITY PLAN
Scottish Castle Detectives
CORE OBJECTIVES
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- To support a new type of heritage economy.
- To engage and enthuse young people.
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- To promote the benefits of traditional buildings, materials and skills.
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OVERVIEW
Introduce children to some of the main castle types used throughout Scotland.

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SECOND LEVEL WORKSHOPS

P5 – P7, AGES 9 – 11 YEARS

ACTIVITY PLAN
Bridges – Structural Investigation

CORE OBJECTIVES

The core objectives of the Engine Shed are

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- **To engage and enthuse young people.**
- To be a facilitating hub for the sector.
- To promote the benefits of traditional buildings, materials and skills.
- To create a world class building conservation research and education facility.

ACTIVITY PLAN
Robots, Programming and VR Technology

CORE OBJECTIVES

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- To raise conservation standards.
- To support a new type of heritage economy.
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ACTIVITY PLAN
Energy Engineer

CORE OBJECTIVES

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- To support a new type of heritage economy.
- **To engage and enthuse young people.**
- To be a facilitating hub for the sector.
- To promote the benefits of traditional buildings, materials and skills.
- To create a world class building conservation research and education facility.

OVERVIEW

This workshop will encourage pupils to consider how energy sources and usage

ACTIVITY PLAN
The Science of Stone


CORE OBJECTIVES

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- To raise conservation standards.
- To support a new type of heritage economy.
- **To engage and enthuse young people.**
- To be a facilitating hub for the sector.
- To promote the benefits of traditional buildings, materials and skills.
- To create a world class building conservation research and education facility.

OVERVIEW

The purpose of this workshop is to introduce children to some of the types of stone



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ACTIVITY BOXES

3D PENS



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ACTIVITY BOXES

MINIBRICKS



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ACTIVITY BOXES

STONEMASONRY WITH SOAP



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ACTIVITY BOXES

TIN CASTING



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MASTERBUILDERS

WORKSHOPS



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WEE BUILDERS WORKSHOPS



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TECHNICAL EDUCATION & TRAINING 2019/20

TECHNICAL OUTREACH & EDUCATION – ACTIVITY

Achievements:

1. 3841 participants in Activity Team workshops and activities in year to date
2. 1215 participants in James Watt activities over the summer hols
3. 352 Masterbuilder participants (stone / earth / fired earth / metal / lime / thatch Sat. workshops)
4. 960 school pupils engaged with since 1/4/19

Looking Forward:

1. Activity boxes being developed - to be made available to City Heritage Trusts across Scotland
2. Activity 'how-to' resources being written up and published online for groups to use – spreading our reach further.
3. Year of Coasts and Waters 2020 – themed activities across the year (Masterbuilders etc, school holidays).
4. 'Tinkertown' construction activity for families during Easter holidays 2020. Child-friendly building and making with real tools and materials.



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St Modan's High School, Stirling Building Craft & Technician Training Project

- Industry unhappy with poor quality candidates coming out of school and college
- Recognition that schools and employers need to work together
- Traditional construction skills not being taught
- Need for "project based," learning
- Local head-teacher that values vocational learning and careers
- Ability for us to 'do' practical things, both craft and technical
- School within walking distance of Engine Shed, Stirling
- Partnership to deliver new programme



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NATIONAL 4 CONSTRUCTION CRAFT AND TECHNICIAN QUALIFICATION STRUCTURE

Code	Title	SCQF Credit points	SCQF Level	SQA Credit Value
Theory (technology based)	The Construction Industry: An Introduction	3	4	0.5
Theory (technology based)	Design Project: An introduction	6	4	1
Practical (Workshop Based)	Carpentry and Joinery: An Introduction	3	4	0.5
Practical (Workshop Based)	Brickwork: An Introduction	3	4	0.5
Practical (Workshop Based)	Roof Tiling : An Introduction	3	4	0.5
Practical (Workshop Based)	Stonemasonry :An Introduction	3	4	0.5

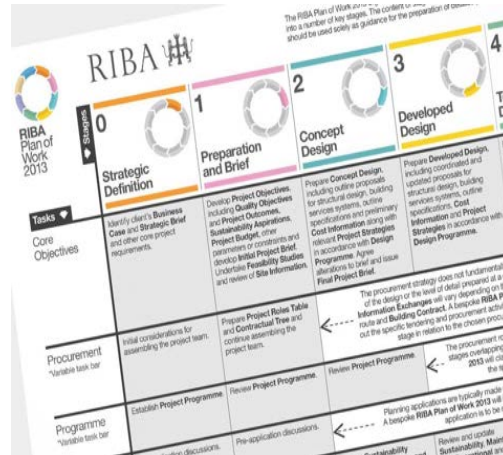
- This qualification incorporates a balance of both Craft and Technician elements and will provide candidates with a broad range of experiences
- The mandatory units will cover the role of a Technician in the construction industry and provide an overview of the roles and responsibilities of a construction team
- The optional units are craft based and will provide practical hands on experience similar to that of a building site



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HES/ST MODAN'S PILOT N4 CONSTRUCTION CRAFT AND TECHNICIAN

- The project will go through the same stages as a live construction site build
- Pupils will have to design, cost and chose materials for their build ensuring that it fits the client's (HES) brief
- Throughout the process the young people will assess whether they are meeting targets with regards to timescales, costs etc.



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St Modan's High School, Stirling Building Craft & Technician Training Project

Aim

- Qualifications pathway for young people to access traditional building methods in construction
- Provide real life work experience at pre-apprenticeship level
- Promote traditional skills in schools and access a talent pool of young people
- Use our knowledge and expertise at the Engine Shed to inspire the young minds of the future

Results

- Personal development of individuals
- Greater engagement with academic subjects
- 8/8 want to pursue career in built environment/construction
- 4/8 in apprenticeships
- 3 local schools running project this year, with support from big contractors

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TECHNICAL EDUCATION & TRAINING 2019/20

TECHNICAL CONSERVATION TRAINING - TRAINEES & CRAFT FELLOWS

Achievements

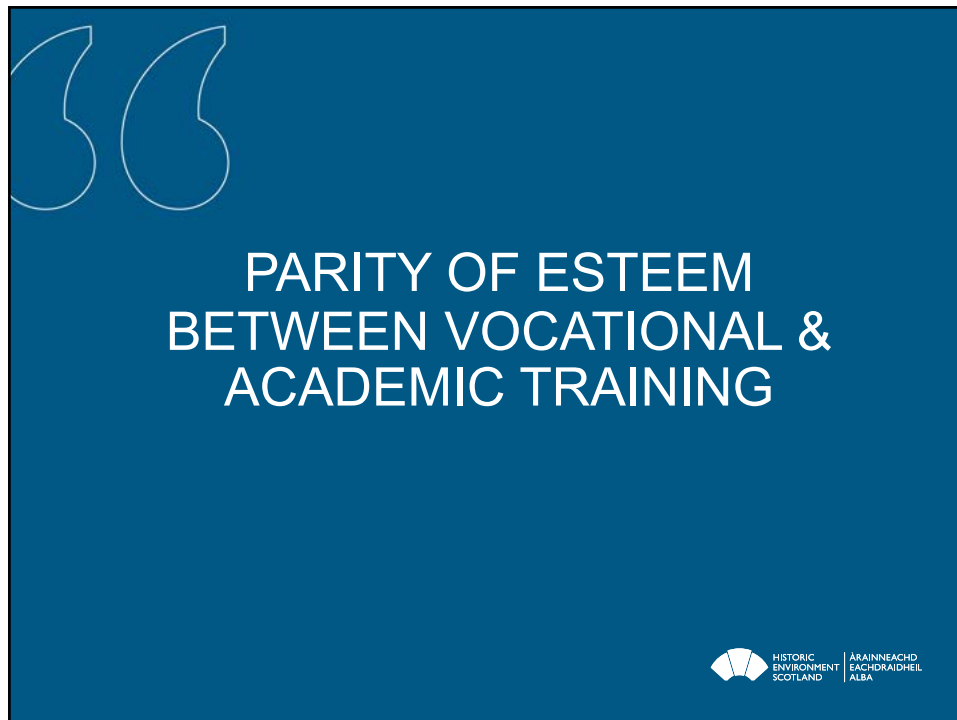
1. 14 Trainees and Fellows, 3 Graduate Apprentices, 2 Next Step Initiative trainees
2. Training workshops: Induction, H&S, Knowledge Exchange
3. New externally funded craft fellow

Looking Forward

1. Additional options of MA and GA: Science, Conservator, Architectural Technology
2. Training workshops: Insights, project management, career skills, CPD Trip
3. Planning for next year's intake of trainees, fellows and apprentices



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