



Infrastructure Commission for Scotland

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**Infrastructure Commission for Scotland
Scotland's Future Infrastructure Priorities – Initial call for evidence and contributions**

Thank you for the opportunity to provide views and evidence to inform the Infrastructure Commission's initial thinking and help guide future investigation into Scotland's long term infrastructure needs. Our submission highlights some information relating to the historic environment which itself makes up a significant proportion of Scotland's existing infrastructure. Where relevant we have also identified some of the challenges and opportunities this presents for the future, together with sources of further information.

Historic Environment Scotland (HES) is the lead public body established to investigate, care for and promote Scotland's historic environment. We are responsible for leading and enabling delivery of [Our Place in Time](#), Scotland's historic environment strategy. Our Corporate Plan – [Heritage for All](#) – sets out our priorities for 2019 onwards. These are:

- The historic environment makes a real difference to people's lives
- The historic environment is looked after, protected and managed for the generations to come
- The historic environment makes a broader contribution to the economy of Scotland and its people
- The historic environment inspires a creative and vibrant Scotland
- The historic environment is cared for and championed by a high-performing organisation

General comments

As highlighted in the National Planning Framework, Scotland's built heritage and historic environment is an integral part of our well-being and cultural identity. It is part of our everyday lives and creates the backdrop for what we do and has done so for those who have gone before us. It shapes our identity, it tells us about the past, the present – and even points the way to the future.



Our historic environment also makes a positive contribution to Scotland's economy and aspirations for increased inclusive growth, generating £4.2bn in 2017 alone. As illustrated by [Scotland's Historic Environment Audit](#) (2018), it supports 66,000 full time-equivalent jobs and in 2018 over 18 million people visited a historic attraction in Scotland, up from 16 million in 2016.

Scotland's historic environment is also a dynamic yet finite resource and we know that proactive and innovative environmental stewardship is required both now and in the future. In particular, the pressing challenges from our changing climate means that the historic environment, which makes up a significant proportion of our existing infrastructure, must continue to adapt and develop longer-term resilience.

As highlighted in the recently published [Historic Environment Policy for Scotland](#), some change is an inevitable part of the dynamic of the historic environment, and how this is managed is the critical factor. It is vital to strike the right balance between the protection of our heritage and the need for new infrastructure and other development. The delivery of infrastructure through the planning system and other consenting regimes (e.g. for roads and electricity generation) is one of the main mechanisms in which this balance is considered – both in specific cases and more strategically. We also recognise that the way our historic assets and existing infrastructure is maintained and adapted to meet societal needs, together with the design and delivery of new infrastructure, can present a number of opportunities for inclusive growth, regeneration and social cohesion.

Against this policy context, and some of the key questions identified in the call for evidence, we have identified a number of drivers, topics and case studies which we hope will inform and support the work of the Commission in developing a long term infrastructure strategy for Scotland.

In particular, we wish to highlight the activities our two working groups relating to the delivery of Our Place in Time (OPIT), the historic environment strategy for Scotland.

OPIT Climate Change Working Group

The OPIT Climate Change working group is undertaking a series of activities to increase awareness of the importance of climate change to the historic environment, through improved communications and production of various outputs targeted to support decision making across specific sub-sectors. A key output of the OPIT Climate Change working group is the 'Climate Change Impacts Guide' that is currently being developed and is expected to be published later this year. There is a section dedicated to climate change impacts and adaptation measures on a range of infrastructure types.

OPIT Built Heritage Investment Working Group

In parallel with this, another OPIT working group is developing a new Built Heritage Investment Plan for Scotland. This is at an advanced stage of its preparation and is expected to be published by the end of 2019.



The purpose of Built Heritage Investment Plan (BHIP) is to deliver a strategic overview of our built heritage asset and identify measures to sustain it. The need for this plan is identified in the Programme for Government, which committed The Scottish Government, HES and partners to developing a long-term Infrastructure Investment Plan for restoring, enhancing and conserving our built heritage environment. The plan will provide a picture of the scale of Scotland's built heritage asset, what it is comprised of and how it is currently managed. It will go on to highlight the value of this resource and set out current funding routes and barriers to its management. It will also identify areas which are under pressure now or are likely to be in the future, and set out a proposed route for prioritisation.

Key outcomes associated with the plan include:

- Statistical analysis of Scotland's built heritage asset, including estimates on number of assets by typology (we anticipate this will include a range of infrastructure types covered by the definition adopted by The Scottish Government).
- Information on how our built heritage is currently managed.
- A prioritisation approach for Scotland's built heritage assets; taking into account the three pillars of sustainability (environmental protection, economic benefit and societal benefit) as well as cultural significance.
- Identification of measures that will help identify those built heritage assets of critical importance as well as those at greatest risk.
- Analysis of thematic areas and asset types which are currently under pressure or are expected to come under pressure in the future for a range of reasons (e.g. arising from societal, economic and environmental change) and outline potential interventions and approaches for their long term management.

Working Group on Tenement Maintenance

Finally, we would like to highlight the activities and outputs from the Scottish Parliamentary Working Group on Tenement Maintenance which has been meeting since March 2018 with the purpose of establishing solutions assist owners of tenement properties to maintain their buildings. A helpful summary of this work and relevant reports can be found on the [Built Environment Forum for Scotland](#) website.

We hope this and the information provided in the accompanying annex is helpful. We would be very happy to provide further information or discuss any of the points raised this submission. Please feel welcome to contact Alasdair McKenzie on 0131 668 8924 or by email on alasdair.mckenzie@hes.scot.

Yours faithfully

Historic Environment Scotland



Annex – HES comments in relation to the questions set out in the call for evidence

1. The remit and in particular the Commission objectives provide an illustration of some key strategic drivers to an inclusive growth and low carbon economy:

- a. What are your views on these drivers and are there any others that should be considered by the Commission?**
- b. What is the impact of these (and any additional) drivers on an inclusive growth and low carbon economy?**
- c. What are the key interactions and dependencies across these drivers?**
- d. What is the impact of each of them and cumulatively on Infrastructure demand and need now and for the future?**

We support the key drivers identified and would highlight the following topics which we believe should form part of the Commission's consideration.

Climate Change

Scotland's climate is far from static; it has always been in a state of flux, and our built environment, historic sites and a wide range of Scotland's historic infrastructure demonstrate evidence of changing environmental conditions. Climate change as we know it today is pushing many of these assets into new and uncharted environmental conditions that they were not designed to cope with. The Intergovernmental Panel on Climate Change's (IPCC) 2014 Synthesis Report Summary for policymakers states that 'Warming of the climate system is unequivocal, and since the 1950s many of the observed changes are unprecedented over decades to millennia'. The need for urgent action was highlighted in the IPCC's 'Global Warming of 1.5OC' special report, published in October 2018, which warned that without immediate mitigating action unprecedented human induced global warming will have catastrophic consequences across the globe by the second half of this century. In Scotland our historic environment and our existing infrastructure is on the frontline of climate change, and it has a crucial role to play in helping Scotland adapt and meet highly ambitious national climate change targets. A short case study relating historic bridges as an example of how a particular asset type is being affected by our changing climate is included as an appendix to our submission.

Energy efficiency

Improvements in energy efficiency are a key element of the Scottish Government's action on climate change and fuel poverty, with considerable implications for the historic environment. A significant proportion of Scotland's building stock is of traditional construction (for example, one in five – around 450,000 – of Scotland's dwellings are more than 100 years old). Existing traditional buildings have a role in relation to sustainability; retention and refurbishment of a building will often be more energy efficient than the demolition (and loss of embodied energy) and construction of a new building. However, energy efficiency measures designed for modern constructions are often not suitable for traditional buildings. Technically inappropriate energy efficiency interventions can be damaging to the integrity and condition of historic and traditional buildings, potentially leading to negative effects on health and wellbeing through creation of poor living conditions.

Through our research into the performance of energy efficiency measures for traditional buildings, Historic Environment Scotland is able to help with providing information and advice on suite of tried and tested improvements which have been successfully installed to



traditional buildings. We are also a partner in the European research project [EFFESUS](#), which explores ways to improve the energy efficiency of historic districts while protecting their heritage value.

Training and skills development

The provision and delivery of training and support for traditional skills development, as well as encouraging individuals into the construction sector more generally, will be key to meeting the short and long-term needs of the historic environment, and in turn crucial for the maintenance and renewal of historic infrastructure. We also see significant opportunities for how the promotion of traditional skills could present increased economic development opportunities across Scotland.

As part of our commitment to invest in traditional skills, HES, together with key partners, including the Skills Development Agency for Scotland and industry representatives, has recently published a [Skills Investment Plan for Scotland's Historic Environment Sector](#). This highlights a number of areas which we consider will be important for the long term sustainability of Scotland's existing infrastructure.

We are also working with a number of infrastructure providers, such as Network Rail, to provide advice and support regarding repair of historic transport assets. We have plans to provide further advice in this context and would be pleased to discuss ways in which we can align our capacity building and training programmes with findings that emerge from the work of the Commission in the coming months.

We would also welcome the opportunity to explore ways in which the management and contracting model for construction projects could be enhanced. For example, we believe further support could be directed towards small and medium enterprises given the important role they can play in supporting the development of traditional skills and trades that are crucial for looking after our historic assets and infrastructure.

Traditional materials

The maintenance and renewal of historic infrastructure and our built environment more generally can be highly dependent upon the availability and access to traditional materials such as stone, slate, timber and thatching materials. Sourcing many of these materials is an ongoing issue. Many of these materials can be produced by small businesses and increasing demand for these materials is the key to supporting local producers and suppliers, particularly small business across Scotland.

In support of this, we are currently developing a Traditional Materials Action Plan to explore ways in which we can work with partners to secure the long-term materials needs of the historic environment. For example, there is currently no commercial producer of Scottish slate and HES is working with partners in the Argyll & Bute region to support the local production of Scottish slate for the first time in over 75 years.

The production of traditional materials in Scotland also presents significant opportunities for sustainable economic development, particularly in rural areas. The [Scottish Stone Group](#) provides further information and examples of this in practice.



We would therefore encourage the Commission to investigate what opportunities might be available to stimulate demand and support the production of traditional materials through the promotion and specification of these within Scotland's long term infrastructure strategy.

We also know that many materials are being imported into the UK with little knowledge of what impact their production is having on the environment or the lives of those producing them. We also know that some of these materials are being transported long distances and contributing to increased carbon emissions. There is therefore significant potential to support and drive the sustainable supply of materials (i.e. materials that have been ethically and sustainably sourced). The [Ethical Stone Register](#) (maintained by Stone Federation GB) is an excellent example of how infrastructure providers can identify ethical products.

Planning for growth and development

The planning system has a crucial role to play in the renewal, development and delivery of almost all of Scotland's infrastructure. Significant progress has been made in recent years to embed a plan-led system across Scotland. HES and partner agencies see significant value from a front-loaded approach to development planning and infrastructure provision, with a collaborative approach to identifying where our rural communities, villages, towns and cities need to grow and change. Approaches to placemaking are becoming more inclusive and initiatives such as the [Place Principle](#) and innovative tools including the [Place Standard](#) have been particularly effective in facilitating conversations around infrastructure priorities at a range of scales. We believe the Commission should look for further opportunities to enhance and support our plan-led planning system. We would also encourage consideration of how community empowerment, including the growing uptake of asset transfer and other forms of community ownership and use of our existing infrastructure, can serve as a strategic driver for change.

In response to some of the initial consultations surrounding the Planning (Scotland) Bill, we have also highlighted the potential for greater integration between Local Development Planning and the preparation of City Deals to support, amongst other things, planning for infrastructure. In many instances there will be a clear connection between the infrastructure projects being identified as part of the City Region Deal process and the spatial planning system. Indeed, Local Development Plans and their associated impact assessments and action programmes will be a key delivery mechanism. Closer alignment would seem particularly desirable given that decisions taken within a City Region Deal process often go on to significantly influence Local Development Plans, which is where local communities will often first become aware of proposed and emerging new developments and have an opportunity to contribute their views.

Finally, we would highlight the significant role that is played by a range of other national plans, policies and strategies (PPS) – including the national transport strategy, the strategic transport projects review, national forestry strategy and a range of non-spatial policies and strategies in prioritising infrastructure investment. HES greatly values the opportunity to work with partner agencies responsible for producing and implementing these PPS to ensure that the need for new infrastructure and the need to protect the historic environment is managed at a strategic level.



2. Infrastructure has a key role in relation to an Inclusive Growth and Low Carbon Economy:

- a. **What are your views on Scottish Government's definition of infrastructure as provided in the Commission remit, and are there any additional elements that should be considered, or areas that could be omitted?**
- b. **What contribution does each of the infrastructure categories identified make to achieving an inclusive growth and low carbon economy?**
- c. **What role and impact does each of the infrastructure categories identified have on the drivers identified in the Commission remit and objectives?**
- d. **What are your views on the relative importance and impact of optimising whole life asset capacity through investment in enhanced renewals and maintenance compared to investing in and developing new infrastructure?**
- e. **To what extent and in what way can infrastructure act as a catalyst for change in a place; be that at a community, local, strategic or national level?**
- f. **To what extent and in what way can infrastructure act as a catalyst for:**
 - i. **increased economic investment and growth?**
 - ii. **improved service delivery?**
 - iii. **improved community cohesion?**

We support the wide definition that has been provided. We would also encourage greater recognition of contribution of culture to sustainable development beyond the three main pillars of environment, society and the economy. As highlighted above, we estimate there are around 450,000 traditional buildings in Scotland. This is one aspect and a small proportion of Scotland's historic assets, which extends to include a wide range of structures including canals, communications equipment, railways, piers, bridges, civic buildings – and a great deal more. In recognition of this, we would encourage greater recognition of contribution that culture and our heritage can and does make to the circular economy, sustainable development and various aspects of infrastructure maintenance and delivery.

We believe all categories of infrastructure – whether existing or new – can and should make a positive contribution to achieving inclusive growth and the transition to a low carbon economy, sustainable tourism and skills development.

We also believe that, while there will always be the need for new infrastructure of various types, it is increasingly important to make sure we are making the best of existing historic infrastructure, supporting the skills and technologies that will facilitate this and challenging perceptions that replacement is often preferable to renewal. The re-use, adaptation and renewal of existing infrastructure is key to not only delivering policy outcomes for the historic environment, but in supporting a circular economy and range of other sustainability objectives. We would also ask that the Commission consider the potential financial disincentives that currently exist concerning the repair of existing infrastructure in comparison to new build (e.g. discrepancies in the applicability of Value Added Tax rates).

We would also strongly support infrastructure renewal as being a key component in acting as a catalyst for investment, service delivery and community cohesion. As highlighted above, Scotland's built environment and historic sites, places and infrastructure are fundamental to what makes places attractive for living, working and investing in our people, communities and economy.



3. The demand and need for the infrastructure assets included in the Commission remit is considerable and wide ranging. Across all the infrastructure assets identified:

- a. **What is your assessment of the current infrastructure stock in terms of quality of provision?**
- b. **What is your assessment of the current infrastructure stock in terms of its capacity and fitness for purpose to meet current demand and needs?**
- c. **What is your assessment of forecast future needs and demand for infrastructure and the key areas of change and development over a five and 30-year horizon?**
- d. **What do you see as the priority areas for investment in order to enable these future needs and demands to be met?**
- e. **Where do you see future convergence of need and demand having an impact across infrastructure classes?**

Sustainable tourism

Scottish tourism and the offer presented by our historic environment has a unique dependency on quality environments, cultural distinctiveness, social interaction, security and wellbeing. As highlighted by Visit Scotland, the success of Scotland's tourism industry rests on protecting and enhancing the Scottish environment, society and culture, which are vital to the brand, the tourism industry and sustaining Scotland's economic growth. However, a sustainable approach to tourism growth is the only way to ensure long-term success.

The [Heritage Tourism 2020](#) strategic framework seeks growth with a focus on turning Scottish heritage attractions into memorable and authentic experiences. But growth in the heritage sector can introduce tensions, especially through high visitor pressure, and we can see the effect of this at a number of locations throughout Scotland. A key challenge in facilitating this growth is responding to the pressures this can place upon a wide range of infrastructure types. HES and others involved in promoting Scotland's historic environment are working on a range of projects in responding to this challenge.

We are also working with a number of partners to ensure that visitors benefit from a sustainable approach to tourism through better links with local communities, a high-quality tourism experience and a natural and built environment that is cared for. We would be happy to provide further information on this topic if that would be helpful.



4. In relation to approaches to infrastructure assessment and prioritisation and across all the infrastructure assets identified:

- a. **What is your view on existing approaches to evaluation and assessment of infrastructure in Scotland?**
- b. **What is your view of good practise approaches to evaluation and assessment of infrastructure internationally?**
- c. **What is your view of existing approaches to the criteria and principles for investment prioritisation in Scotland?**
- d. **What is your view of good practise approaches to the criteria and principles for investment prioritisation internationally?**
- e. **What is your view on existing approaches and methodologies that enable cross infrastructure sector evaluation and assessment to be undertaken, and also the potential for further development of such approaches and methodologies?**
- f. **What is your view on existing approaches and methodologies that asses impact at different spatial levels, and also the potential for further development of such approaches and methodologies?**
- g. **What is you view on good practice approaches to assessing and establishing the post implementation impact on the desired outcomes from infrastructure investment?**

Managing Change in the historic Environment – Asset Management

HES has recently published updated [guidance on asset management](#) in the historic environment focussing on the role of government departments, local authorities, public bodies, and those with large estates with multiple historic environment assets. This guidance provides a series of principles that underpin the stewardship of historic assets, aspects of which will be broadly relevant for the evaluation and assessment of infrastructure in other contexts.

Climate Change risk assessment

In response to the challenges identified above in relation to climate change, and as part of our own approach to infrastructure planning, in January 2018, HES published a major report, [Screening for Natural Hazards to Inform a Climate Change Risk Assessment of the Properties in Care of Historic Environment Scotland](#). This was a partnership project with The Scottish Environment Protection Agency and the British Geological Survey. The project assessed vulnerability of HES sites, which range from prehistoric funerary and ritual monuments to medieval castles and post-medieval buildings, to slope instability, coastal erosion and flooding (fluvial; pluvial; groundwater; coastal), all of which are expected to be exacerbated by climate change. The study highlighted that the majority of HES sites, some of which are major visitor attractions, are at high or very high risk from one or more of these hazards. This study represents the first step in a comprehensive and ongoing exercise to understand, monitor and manage environmental risk to our estate and its associated infrastructure. The results of this initial risk assessment are now providing the strategic basis for existing conservation maintenance work programmes for these heritage assets, as well as the allocation of funds for future works. A short case study about this is included as an appendix to our submission.

We would also highlight a major research project commissioned by Scottish Government and funded by Scotland's Centre of Expertise for Waters (CREW), entitled Dynamic Coast: Scotland's National Coastal Change Assessment. This began in response to risks identified in the UK Climate Change Risk Assessment (UK-CCRA). Dynamic Coast has mapped coastal change in Scotland over the last hundred years and has helped us to develop a deep



understanding of past change and current vulnerability. The project aims to aid relevant authorities in identifying parts of the coast that may require additional support. We believe this could also be a powerful tool for identifying areas of risk with reference to existing and proposed coastal infrastructure. A short case study about this is included as an appendix to our submission.

Digital innovation and technology

The development and deployment of new digital documentation techniques provide significant potential for more accurate recording of built assets, as well as additional interpretation and educational benefits for infrastructure management. There are a number of recent examples of this in practice and we would be happy to provide further information on these if that would be helpful.

There is also strong potential for digital technologies to improve effective building management systems. For example, HES recently worked in partnership with the British Geological Survey to develop an integrated digital site assessment survey for the HES estate which includes over 300 historic properties with associated infrastructure. The digital assessment that was undertaken in support of the condition survey process has greatly assisted with quantifying and planning maintenance and repair requirements across our estate and we believe there is potential benefits of this type of system for other asset managers.



Appendix – Case studies and other sources of information

KEY DRIVERS CASE STUDY (CLIMATE CHANGE): HISTORIC BRIDGES AND SCOUR DAMAGE

Historic bridges are a significant proportion of Scotland's infrastructure and are vital to Scotland's communities and economy. As well as being crossing points for pedestrians or vehicles, they may also carry essential utility infrastructure. While data on flood risk is available through SEPA's Flood Maps, the vulnerability of historic bridges to scour is less well understood. Scour is the erosion of riverbed deposits from bridge foundations; it is understood to be the primary cause of bridge failure in the UK.

Following the severe flooding in the winter of 2015/16, particularly in Aberdeenshire, which saw a number of historic structures damaged, the need for a more strategic approach to bridge scour has been recognised. Historic Environment Scotland worked with partners during 2016 to identify a list of designated (scheduled or listed) bridges that were being affected by scour. This information went on to inform a Local Authority led comprehensive survey of the public road and pedestrian bridges damaged by Storm Frank. While this was a useful project, HES currently does not have any means of assessing scour risk at a national scale and therefore no means of identifying those heritage assets that are most at risk but would be supportive in taking forward further partnership work in this area. Sources of further information on this topic can be found below:

A report on "Flood and Scour Related Failure Incidents at Railway Assets between 1846 and 2013" was published in April 2014 by the JBA Trust and is available at: www.jbatrust.org/wp-content/uploads/2016/01/JBA-Trust-Flood-and-scour-failure-at-railway-assets-1846-to-2013-W13-4224-FINAL.pdf

A report on "Vulnerability of bridges to scour risk: an international expert elicitation workshop" was published in August 2017 by the JBA Trust and is available at: www.jbatrust.org/wp-content/uploads/2017/09/W14-7290-JBATrust_University-of-Bristol-International-scour-workshop.pdf

A paper on "Climate change impacts on railway structures: bridge scour" highlights the fact that current scour risk models in use by Network Rail may be insensitive to increases in risk due to Climate Change: <https://doi.org/10.1680/jensu.15.00021>.



EVALUATION AND ASSESSMENT CASE STUDY: CLIMATE CHANGE RISK ASSESSMENT

In 2018 Historic Environment Scotland published the initial results of our Climate Change Risk Assessment. This phase of the project is a desk based assessment of the current environmental risk on the 336 Properties in Care. By understanding the current risk from natural hazards to our diverse properties, we have been able to identify the sites we believe to be most at risk from future climate change. With this new data we are in a much stronger position to prioritise ongoing maintenance and conversation work that can help to increase the resilience of these sites.

Core to the successful delivery of this project was working in partnership with other public sector organisations, primarily the British Geological Survey (BGS) and the Scottish Environment Protection Agency (SEPA). Both BGS and SEPA provided natural hazard datasets that were used in the project, as well as assistance and guidance in using the datasets appropriately and making sure they were communicated correctly. SEPA provided their datasets under “Action on Climate Change”, a joint statement between HES, SEPA, Forestry Commission Scotland and Scottish Natural Heritage on our shared responsibilities around climate change.

During the development of our risk assessment, we were part of Adaptation Scotland’s ‘Adaptation Learning Exchange Risk Task Group’. The group brings together a range of public sector organisations including Scottish Water and Aberdeen City Council, to support one another during the risk assessment process. This allowed us to sense check our approach at various stages throughout the process, and to learn from others in the wider public sector. In short, our entire project has been shaped by working in partnership with public sector partners.



EVALUATION AND ASSESSMENT CASE STUDY: CASE STUDY: DYNAMIC COAST

A major research project commissioned by Scottish Government and funded by Scotland's Centre of Expertise for Waters (CREW), entitled Dynamic Coast: Scotland's National Coastal Change Assessment, began in response to risks identified in the UK Climate Change Risk Assessment (UK-CCRA). Dynamic Coast has mapped coastal change in Scotland over the last hundred years or so, in the process developing a deep understanding of past change and current vulnerability. The project aims to aid relevant authorities in identifying parts of the coast that may require additional support. The identification of susceptible assets will help inform the development of plans robustly based on a strategic, objective and publicly available evidence base (DynamicCoast.com).

HES has been heavily involved in this project from its inception and sits on the steering group ensuring that the historic environment is fully incorporated within the project. This has enabled us to deepen our understanding of coastal change at many sites, including those in our care. UKCP18 indicates that Scotland may experience up to a metre of sea level rise by 2100, meaning that many of historic monuments and sites on the coast will be vulnerable, including those currently protected by coastal defences, many of which are already nearly a hundred years old.

One of the supersite case studies for the second phase of Dynamic Coast is the Bay of Skail, the location of the HES site of Skara Brae, a Neolithic settlement site that has been protected by a sea wall since the 1920s. Skara Brae is a major tourist attraction, with over 110 000 visitors in 2017-18 financial year. While coastal erosion remains a threat to the long-term survival of the site, the results of Dynamic Coast along with our own monitoring regimes (including biennial TLS surveys) indicate that the existing sea defence continues to fulfil its function of protecting the site. Regular monitoring and enhancement will continue. HES is working closely with the Dynamic Coast team to combine available data sets at a variety of scales to enhance our understanding of the processes at work and the site's vulnerability. This is informing our plans for management of the site and any future interventions will be underpinned by this robust analysis, taking full advantage of the potential of technological developments.



References and other sources of information

- [Historic Environment Policy for Scotland](#) (2019)
- Built Heritage Investment Plan for Scotland's Historic Environment Sector (expeted end-2019)
- Climate Change Impacts Guide for the historic environment (expected end-2019)
- [Scotland's Historic Environment Audit](#) and [summary infographic](#) (2018)
- [Managing Change in the Historic Environment: Asset Management](#) (2019)
- [Use and Adaptation of Listed Buildings Case Studies](#): Managing Change in the Historic Environment in practice
- [Scotland's building stone industry: a review](#) (2016)
- [Skills Investment Plan for Scotland's Historic Environment Sector](#) (2019)
- [Scottish House Condition Survey](#)
- [Traditional Buildings Health Check Scheme](#) (Stirling pilot)
- [Scottish Parliamentary Working Group on Tenement Maintenance](#)
- [Short Guide 1 - Fabric Improvements for Energy Efficiency in Traditional Buildings](#) and [Technical Paper 24 - Review of Energy Efficiency Projects](#). Provides advice on thermal upgrade of pre-1919 homes – with measures that are beneficial for occupants and historic fabric.
- Climate change adaptation pilots (domestic scale) and published guidance 2016. See [Short Guide 11 - Climate Change Adaptation for Traditional Buildings](#) .
- Work at the Ridge on handling exclusion and upskilling in the construction sector (see [Refurbishment Case Study 26 - Black Bull Close, Dunbar](#)). Also developing a local core of experience ready for local investment such as CARS etc.
- [Ethical Stone Register](#)
- HES pilot work on harbour repairs – [Refurbishment Case Study for Cove Harbour](#) on developing technical measures to maintain and repair such traditional structures.
- Ethical Trading Initiative's [A Guide for the ethical sourcing of natural stone from Rajasthan, India](#)



HISTORIC
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- Unicef's 2015 report on child labour and the sandstone industry in Kota & Bundi, in Rajasthan, India, *Children's Lives Cast in Stone*.
- [Heritage Tourism 2020](#)

Historic Environment Scotland
3 May 2019