

SCOPING STUDY SPECIFICATION

Assessment of Overheating Risk in Buildings Housing Vulnerable People in Scotland

Introduction

[ClimateXChange](#)¹ wishes to commission a scoping study to assess the feasibility of undertaking research to identify the current and future risk of overheating in buildings housing vulnerable people in Scotland, as well as potential measures to mitigate risks.

Background

Policy and practice stakeholders have identified a lack of evidence on overheating risks for buildings housing vulnerable people in Scotland. There is anecdotal evidence of overheating being an existing issue in some NHS facilities and in care homes in Scotland. These risks include both the direct risk to occupant thermal comfort and safety, but also indirect safety risks from building systems failure, e.g. electrical wiring, cold water temperature, legionella. There is also concern that any such issues may be exacerbated by external temperature increases caused by climate change. Overheating issues are of particular concern in buildings housing vulnerable people, who can be less adaptable to temperature extremes and less resilient to building system failures.

Research² has assessed the current and projected thermal performance of hospitals in England. This identified existing overheating issues in a range of hospital building types and highlighted the particular influence of carbon reduction measures in new build or as retrofits, on increased internal temperatures.

There has been no comparable study for Scotland that has considered the performance of Scotland's building stock in the current and projected Scottish climate. There is also a lack of evidence in the UK regarding the thermal performance of other buildings housing vulnerable people, such as nursing homes, residential care and sheltered housing.

ClimateXChange planned to commission a research project³ to investigate these issues but exploratory discussions with NHS Scotland have revealed that the type of performance data needed to conduct such a detailed project may not be available or being recorded. Where such data might be recorded, it is generally held by individual NHS Boards. Only limited specified data are held centrally, and it is not currently known which sites are typical or have relevant data available.

¹ For more information on ClimateXChange, the Scottish Government-funded Centre of Expertise on Climate Change, see www.climatexchange.org.uk

² Delivery of Robust Hospital Environments in a Changing Climate Project, University of Cambridge

³ The project specification can be read here:

http://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=JUL251011

As understanding what data are available and how they can be accessed is essential to progressing the planned research into the potential impacts of overheating in buildings housing vulnerable people in Scotland, ClimateXChange is commissioning this scoping study as a preceding step to a future main research project.

Scoping Study Aim

- To establish how extensive existing internal temperature data are and how they could be accessed and applied to our future main research project.

The following questions are to be answered by the Scoping Study:

- Does building stock housing vulnerable people in Scotland need to be classified before selecting which sites to work on?
- Establish where data are already available for each NHS Board's inpatient buildings.
 - Select a sample, in consultation with the steering group, which will be of interest in the main Research Project.
- Where do facilities managers or BMS record information on temperature?
 - Conduct surveys with Facilities Managers to determine. (NHS Boards will be able to provide contact details).
- What form are existing data in?
 - How accessible / interrogate-able are they to the research project team?
 - How regularly / over what time periods are they being recorded etc.?
 - How compatible are the existing datasets?
- What practices/ facility retrofits, if any, are currently used to mitigate overheating events?
 - Assess current operational practices and their evidence before and after, if any (e.g. portable fans, relocation of complainants to a cooler space)
 - Assess any recent retrofit mitigations and their evidence before and after, if any (e.g. solar film, trees/ planting, air-conditioning units),
 - If appropriate highlight any best practice, and make recommendations for the future.
- If appropriate data are not being recorded at present, make practical recommendations to achieve this, e.g. upgrade of current systems, remote recording, data storage protocols, specifications and a sample permission form etc.
- Assuming new on-site recording of temperature is necessary where data not available/ or supplement existing, provide practical recommendations and specification to achieve this.
 - E.g. can this be gathered by health / care professionals, or can non-health care professionals access parts of hospitals/care homes required to do this work?
 - What training, access and disclosure checks will be required?
 - Would the consultants/researchers need to be accompanied on site?
 - Is there appropriate equipment that could be installed by existing staff?
 - What site measuring equipment is appropriate? What processes & checks are required before installation – how long do these checks take and who will need to give clearance, and how much will all this cost, e.g. £ per m2 or per ward or building?

- How much data will be needed? How many summer seasons and what will the relative impact be of only having data for one summer season? (In terms of how robust the Research Project can be). How frequently will data need to be recorded (e.g. every day, or half hourly)?
- What data collection and storage specification are recommended, providing indicative costs?

Outputs

The output from the scoping study will be:

A scoping study report outlining your findings and making key recommendations for our future main Research Project. This should include:

- Findings in response to the questions set out above.
- All existing facility data –set out in an appropriate spreadsheet or database; or a sample of this.
- List all the key contacts made during this report preparation.
- A sample scope for the technical requirements of the future main research project

Scoping Study Timetable

Milestone	Completed by (2016)
Project kick-off meeting, to agree <ul style="list-style-type: none"> • Overall approach • Resolution of any outstanding questions/ exceptions • Roles of steering group members in supporting the contractor 	Late January 2017
Submission of draft report	Mid-April 2017
Steering group meeting (incl. presentation of findings), and comments on draft	End April 2017
Submission of final report	May 2017

Governance

Ciara O’Connor is the ClimateXChange project manager for this scoping study.

The Project Steering Group involves the following organisations: ClimateXChange, Health Protection Scotland, Health Facilities Scotland and Adaptation Scotland.

Award Criteria

The quotation will be evaluated using the following criteria and weightings.

Award Criteria:

Price		20%
Quality		80%
Proposed personnel	1. State the team members' names and their role in the team for this scoping study.	Not scored
Understanding	2. Understanding of the scoping study specification and the policy environment. <ul style="list-style-type: none"> The proposal should include an introduction which demonstrates a clear understanding of the research requirements, including an understanding of the policy environment and the supporting role of this research; the need for this research; the research aim; and how the proposal will address this aim. 	12.5%
Methodology I	3. Methodology for assessing whether building stock needs to be classified and for selecting cases for analysis. <ul style="list-style-type: none"> Demonstrate the proposed team's technical understanding of relevant building characteristics and performance; present the methodological approach to defining building types and selecting a sample of buildings for analysis; demonstrating the proposed team's technical and research expertise in applying such approaches. 	15%
Methodology II	4. Methodology for assessing how extensive the existing internal temperature data are for NHS building stock.	20%

	<ul style="list-style-type: none"> • Present the methodological approach to collecting quantitative and qualitative building performance data, demonstrating the proposed team’s technical and research expertise in applying such approaches. • Present the methodological approach to measuring and comparing the thermal performance of selected buildings under a range of scenarios. 	
Methodology III	<p>5. Methodology for making recommendations for recording of on-site internal temperature data where they are currently not available.</p> <ul style="list-style-type: none"> • Present the methodological approach to establishing how this could be gathered; establishing what checks/site access would be required; suggesting what measurements would be appropriate. • Demonstrate the proposed team’s knowledge of equipment / technologies that could be deployed for recording internal temperature. 	20%
	<p>6. Analysis of data and reporting.</p> <ul style="list-style-type: none"> • Demonstrate the proposed team’s capability in analysing building performance data, and experience producing a synthesis reports for a non-technical audience. • Present quality control and expectations for format of draft documents. 	10%
	<p>7. Risk</p> <ul style="list-style-type: none"> • Present a risk assessment matrix detailing any risks identified in relation to the delivery of this scoping study, and proposed mitigation measures to minimise their probability and impact, 	2.5%

	focused particularly on risk to completion on time.	
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Submitting a proposal

Please send a brief proposal and work plan responding to the award criteria above and with deadlines, CVs for the proposed delivery team, applicable day rates, relevant research experience and the number of person days' work proposed.

Proposals need to be submitted to lee.callaghan@ed.ac.uk and cc'd to Ciara.o'connor@ed.ac.uk for evaluation **by noon on 13 January 2017**. We aim to notify the successful bidder by 19 January in order for work to commence ASAP in 2017. Please contact Ciara O'Connor on Ciara.o'connor@ed.ac.uk /0131 6514645 if you would like clarification of any of the above.

Proposals are expected to be in the range of £30,000 (including VAT). However, ClimateXChange would welcome proposals for less than this.

You should highlight any potential conflicts of interest in your proposal. For queries about what may constitute a potential conflict of interest, please contact Ciara.o'connor@ed.ac.uk.

CXC Secretariat

19 December 2016