

## Approaching Near Zero Energy In Historic Buildings

Deliverable No.: D 2.1.2

Deliverable Title: Open Space

Submission date: 18/09/2022

Deliverable Coordinator: CCAE (UCC)

Lead Authors: Caroline Akiboye, Simon Conolly, Kevin McCartney, Jose Ospina

Deliverable Type: R

R = Document, report

DEM = Demonstrator, pilot, prototype, plan designs

DEC = Websites, patent filing, press & media actions, videos, etc.

Dissemination Level: PU

PU = Public

CO = Confidential, only for members of the consortium, including the Commission Services



Disclaimer: This document reflects only the authors' views and not those of the European Community. The information in this document provided "as is" and no guarantee or warranty is given that the information is fit for any particular purpose. The user thereof uses the information at its sole risk and neither the European Commission nor any member of the Energy Pathfinder consortium is liable for use that may be made of the information.



This project has received funding from the European Union's Northern Periphery and Arctic Programme (2016-2020) under Grant Offer Letter 304\_1175\_20194.

## CONTENTS

	page
1.0 SCOPE	2
2.0 REFERENCE DOCUMENTS	3
3.0 CONTEXT OF MYROSS WOOD HOUSE	3
3.1 Location	3
3.2 Accessibility	3
3.3 Brief description of Myross Wood House	3
3.4 Current users	4
4.0 OPEN SPACE PROCESS	4
4.1 Methodology	5
4.2 First iteration	6
4.3 Second Iteration	7
5.0 OUTCOMES AND CONCLUSION	8

### 1.0 SCOPE

The Open Space activity described here aims to “invite a wider stakeholder audience, including members of the local community, public sector and project design team, to come together for an Open Space workshop” - this very democratic structure will allow participants to understand the intention of the project and that their concerns, interests and motivations will be taken into consideration at every stage.

“Open Space” will be delivered in the following steps:

Methodology development sessions

Champion engagement sessions (to support engagement / outreach)

One Open space workshop (engaging up to 30 stakeholder participants)

Consolidation, analysis and evaluation session with key stakeholders Toolkit development session

This report focuses on the methodology used to meet aims of the activity description and deliverable DT2.1.2

The Pathfinder project includes participants and demonstration projects, from different Partner regions, each having developed methods appropriate to their cultural setting:

Scotland (HES) - [Bayview, Orkney Islands;](#)

[Lighthouse keepers' cottages, North Ronaldsay.](#)

Faroe Islands (Landsverk) - [Vicarage of Onagerroi Vidareidi.](#)

Finland (Oulu University of Applied Sciences) - [Rector's House, Raahe.](#)

Sweden (Umea University) - [Tegs Kyrka, Umea.](#)

Ireland (NCE Energy Hub, Cork) - [North Cathedral, Cork.](#)

Ireland (CCAIE / UCC) - [Myross Wood House, Co. Cork.](#)

Detailed reports are available on the website for these. This report is a summary of the methodology developed for Myross Wood House.



2.0 REFERENCE DOCUMENTS

Refer to links for other project reports in the [Pathfinder website](#).

3.0 CONTEXT OF MYROSS WOOD HOUSE

3.1 Location

Myross Wood House (MWH), listed on the National Inventory of Architectural Heritage, Reg No 209144210, is situated in Ardagh, Leap, Co. Cork. Its surrounding landscape and woodland is listed as Special Area of Conservation (SAC); site code 001070 The house is in the proximity of Glandore bay, an inlet of the Celtic Sea.

3.2 Accessibility

Accessibility is off the N71 at the village of Leap (from Cork city) by bus and car. Leap, like all rural villages in Ireland is sparsely populated (247- 2016 census) but is part of a rural network of villages along the south west coast of Ireland. Myross Wood House would have access to a larger population from the Cork city, the large town of Skibbereen and other towns and villages of west Cork.

3.3 Brief description of Myross Wood House

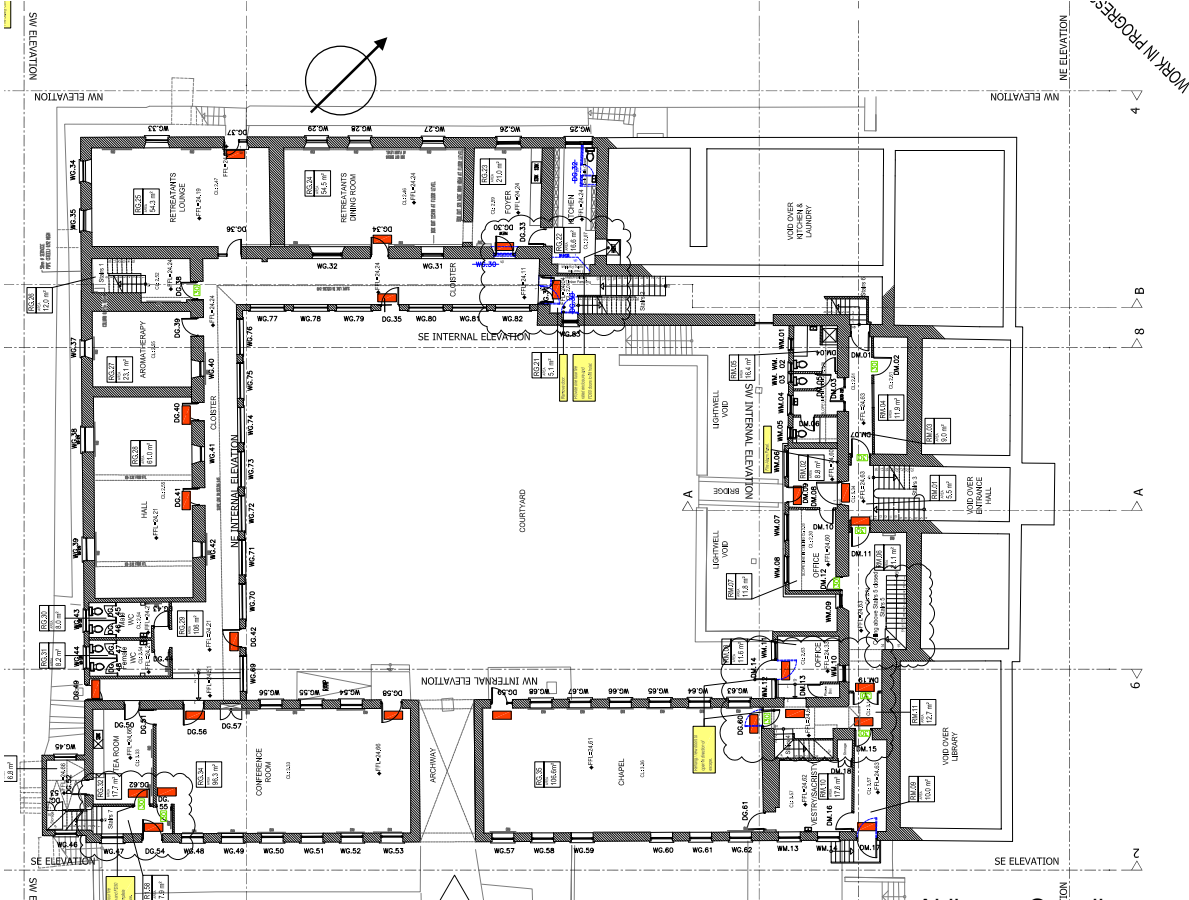
MWH is currently laid out as a quadrangle; each wing built at different periods; the oldest, NE and SW wings were built around the late eighteenth to early nineteenth century. The NE wing was originally a dwelling house and SW were the stables. In the mid twentieth century, the property and the surrounding farmlands were acquired by the Missionaries of the Sacred Hearts (MSH),and used as a seminary and retreat. MSH expanded the buildings to its current 52 bed size with addition of a chapel and large meeting halls, in a new south east wing in 1959.

Reduction in occupancy mirrors the world wide decrease in the training of priests; it was reported by Fr Curran of the MSH that their energy cost for 2016 to 2017 “due to the noviciate group of six people who lived with us” and “there was a similar, but smaller, increase in early 2018...due to smaller group of novices that year”.

At our first visit to MWH in 2019, there were two priests in residence; a suite of rooms was occupied by a mother and son being given refuge. Once a year, the Novena to the Sacred Heart takes place. For nine days a large congregation of people involving local communities participates in various activities.



Apple Maps

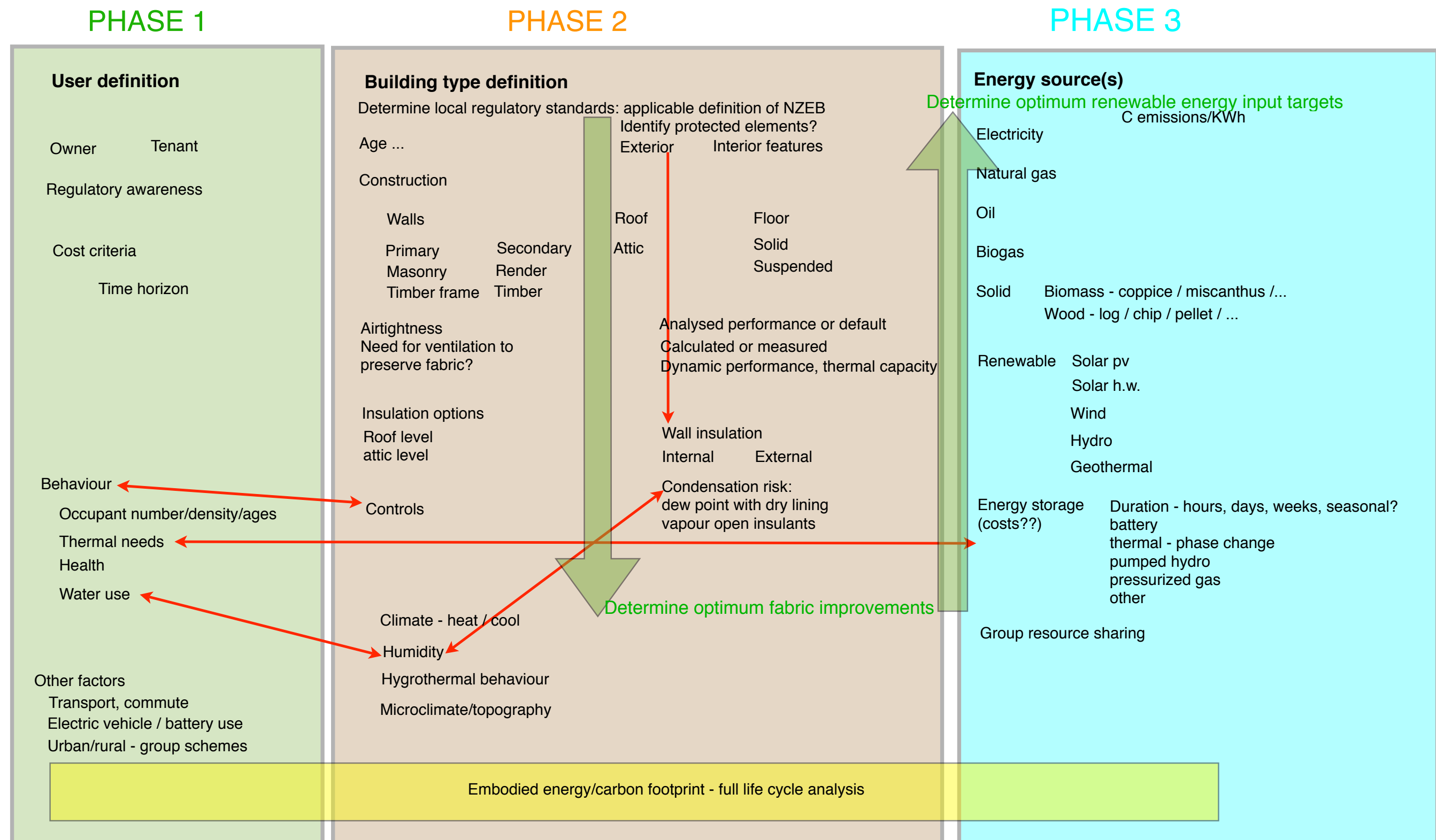


Akiboye Conolly









Akiboye Conolly Architects 7 Alexandra Place Cork T23 W7C9 021 450 9565 AkiboyeConollyArch.com

## 4.1 METHODOLOGY

A logical sequence starts with **PHASE 1** in the diagram, focussing on user needs, activities and behaviour, including energy use in travel, such as for employment, which can easily eclipse the energy used in a building, depending on location and employment.

The results of this feed iteratively into **PHASE 2**, which aims to reconcile the user needs with what is possible within the fabric of the building.

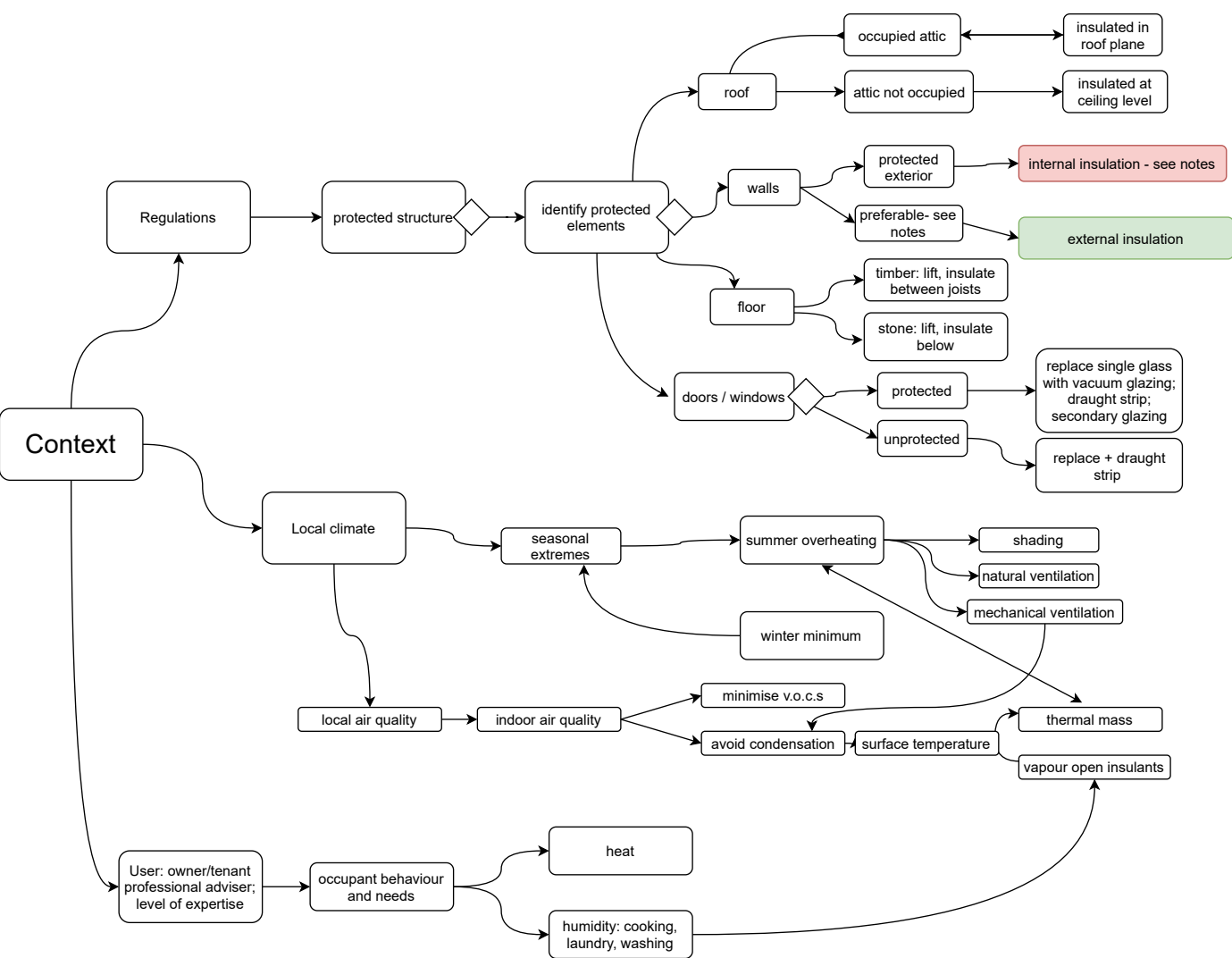
Once this is optimised, following the sequence shown in the **green arrows** in the diagram, **PHASE 3** explores how to bridge the shortfall in energy needs with renewable sources.

## 4.2 First Iteration

Delivery of Open Space workshop 1 designed by Prof. Kevin McCartney

This was delivered on September 26 2021, having been advertised by Green Skibbereen CLG, and it dovetailed into the launch of Centre of Excellence of Climate Action and Sustainability (CECAS) at Myross Wood House. The event was chaired by Caitriona Courtney of NCE Energy Hub, Partner in Energy Pathfinder. At this event BMA presented a vision for CECAS, Kevin Busby presented the work of year 3 students at CCAE, and Akiboye Conolly Architects presented studies on the building fabric and energy use, and scope for improvements to approach near zero energy.

This included, for example, comparisons of the pros and cons of various ways of improving wall insulation, internally or externally, which were reflected in the Second Iteration, below.



Logic diagram of the proposed Toolkit



Photographs of the Open Space workshop, September 2021 at the launch of CECAS



## 4.3 Second Iteration

Delivery of Open Space workshop 2 designed by Prof. Kevin McCartney

This ran as a two-part session, the first part being a guided tour led by Akiboye Conolly Architects pointing out the characteristics of the building. The aim was to get the participants to divulge the level of their understanding of the different parts of the building, how much, and what types of, remedial work has been carried out in the past, and how it relates to their experience of using the building.

The second part, an interactive discussion with the stakeholders led by Prof Kevin McCartney, began with a questionnaire which sought to gain an understanding of their connection with the place:-

## Your personal connection to Myross Wood House

- ☐ I live in Myross Wood House
- ☐ I work in Myross Wood House or its grounds
- ☐ I am considering running activities in Myross Wood House
- ☐ I am an occasional visitor to Myross Wood House & Grounds
- ☐ I have strong personal memories associated with the place
- ☐ I live near Myross Wood House
- ☐ Other (please indicate)

A sample of questions, below, on wall insulation favoured external insulation (retaining interior features in the original east wing whilst allowing reproduction of external features with thinner insulation; less disruption generally, no loss internal space; allowing higher levels of insulation on the south wing, which lacks historic features). Full questions and results are available on the [website](#).



Photographs of the Open Space workshop, October 2021, second iteration

## Wall Insulation

### Your preference for Myross Wood House



17<sup>th</sup> Century Entrance East Wing

☐ Internal

☐ External



1980's South Wing

☐ Internal

☐ External

9

Question posed (left above)

responses (right above)

## Wall Insulation

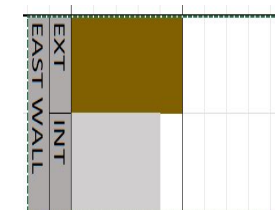
### Your preference for Myross Wood House



17<sup>th</sup> Century Entrance East Wing

☐ External

☐ Internal



1980's South Wing

☐ External

☐ Internal



10



5.0 OUTCOMES AND CONCLUSION

Thermal comfort was a priority for the building users. The building was supplied by one of two old oil-fired boilers rated at 365KW output (401KW input); [refer to Akiboye Conolly Architects Energy Upgrade Study](#).

As early as 2021, about 16 rooms were being used for living accommodation and work spaces by local artists, crafts people and businesses. The realisation of the need to address energy consumption required several grant funding applications by Green Skibbereen. These included Leader (a rural development programme), Better Energy Communities (BEC) administered by the Sustainable Energy Authority of Ireland (SEAI), which necessitated the Energy Assessment study by Liam McLaughlin, [also on the website](#)

The challenges faced by the current users of the building is that they have, so far, been unable to secure a long term lease from the owners; the payback, over a period of years, on improvement works are required criteria for grant funding.

Whilst Energy Pathfinder set out to bring old and historic buildings closer to Near Zero energy performance, we need to remember that energy use in travel, such as for work, can easily eclipse the energy used in a building, depending on location and employment. The provision of employment and work activities within the building is a critical factor in overall energy use.

Open Space is one of the steps in Co-Design, and a report has been written explaining the theoretical and educational benefits of this form of communication by designers. These practical steps - First and Second Iterations - have fed into the paper by Jack Lehane and Prof Kevin McCartney.

Priorities & Phasing Improvements  
write “X” to schedule no more than TWO actions in each year

ENERGY UPGRADE ACTIONS	2022	2023	2024	2025	2026
Wall Insulation					
Roof Insulation					
Ground Floor insulation					
Draught exclusion					
Heating System Upgrade					
Hot Water System Upgrade					
Improvements to reduce moisture in walls / drying out of damp walls					

Question assuming a five year time horizon