



eTEACHER

**D1.5 Mentoring Meetings**

**WP1, T1.5 Project Development Mentoring**

*Date of document*

**September, 2019 (M23)**

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eTEACHER

EE-07-2016-2017

Innovation Action



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 768738.

**Disclaimer**

*The information reflects only the author's view and the Commission is not responsible for any use that may be made of the information it contains.*

**Technical References**

Project Acronym	eTEACHER
Project Title	end-user Tools to Empower and raise Awareness of Behavioural Change towards EneRgy efficiency
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Project Duration	1 October 2017 – 30 September 2020

**Versions**

Version	Person	Partner	Date
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## 0 Executive summary

eTEACHER's WP1 sought to develop and propose effective ideas for a behaviour change intervention, based upon research evidence, consultation with residents in the buildings where eTEACHER will be piloted, and a pre-chosen structured framework for designing behavioural change initiatives, *Enabling Change*.

WP1 has focussed upon developing an evidence-based approach to intervention design. This has been done by engaging with literature on effective approaches to behaviour change (in general and in relation to ICT), engaging with users of pilot buildings and, via dialogue with other project partners, and through the development of a tailored approach to the *Enabling Change* framework for eTEACHER. This work was carried out during the first year of eTEACHER and is summarised in eTEACHER's Deliverable 1.1 (Morton, Reeves & Bull, 2018a), Deliverable 1.2 (Morton, Reeves & Bull, 2018b), Deliverable 1.3 (Preston, 2018) and Deliverable 1.4 (Reeves, Morton & Bull, 2018).

*Enabling Change* is an evidence-based approach for developing and delivering behaviour change interventions (Robinson, 2012) and advocates a participatory approach to project development, at both whole-programme level and with relation to specific interventions. Therefore, suggested actions, tasks and responsibilities related to applying the Enabling Change process to eTEACHER throughout Years 2 & 3 of the project was proposed in eTEACHER's Deliverable 1.4. To support project partners with this, WP1 was responsible for Project Development Mentoring during the second year of the eTEACHER project. This report reiterates the suggested actions, tasks and responsibilities relating to applying the Enabling Change process throughout Years 2 & 3 of eTEACHER and provides evidence for the support and mentoring supplied to project partners by De Montfort University.

This report presents a summary of the support and mentoring meetings carried out, but also acts as a reference document by including all supporting materials produced by DMU in Appendices. These documents focus on the facilitation of Feedback Forums within the eTEACHER pilot buildings as a means to continue building user engagement throughout the development phase of the project but to also act as vital feedback mechanisms from actual building users, and ultimately the eTEACHER tool users, to aid the development and implementation phase of the project. The report therefore consists of a section summarising the application of the "Enabling Change" framework for eTEACHER, a section detailing all mentoring activities taken place over the past year relating to applying the "Enabling Change" framework and a detailed Appendices which contains all relevant documents and materials related to the mentoring activities described.



## 1 Summary

This section highlights the key principles for the design of behaviour change interventions using Les Robinson's (2011) "Enabling Change" framework, as introduced in D1.1 (Morton, Reeves & Bull, 2018), and applied to the eTEACHER project in D1.4 (Reeves, Morton & Bull, 2018). It reiterates the suggested actions, tasks and responsibilities relating to applying the Enabling Change process throughout Years 2 & 3 of eTEACHER. However, the main purpose of this document is to provide a summary of all mentoring given to project partners by DMU and to create a reference document of all supporting materials produced by DMU during the second year of eTEACHER.

### 1.1 Enabling Change: Overview

The 'Enabling Change' approach (Robinson, 2011) is a practitioner-oriented overview of principles for designing effective behavioural interventions. It has two different levels of planning: programme level (Fig. 1) and project level (Fig. 2). The *programme level* process defines the medium/long term objectives for the behaviour change intervention, in this case for eTEACHER as a whole, whereas the *project level* plan deals with the practicalities of engaging with end-users around specific behaviours, in this case for implementing eTEACHER at pilot sites.

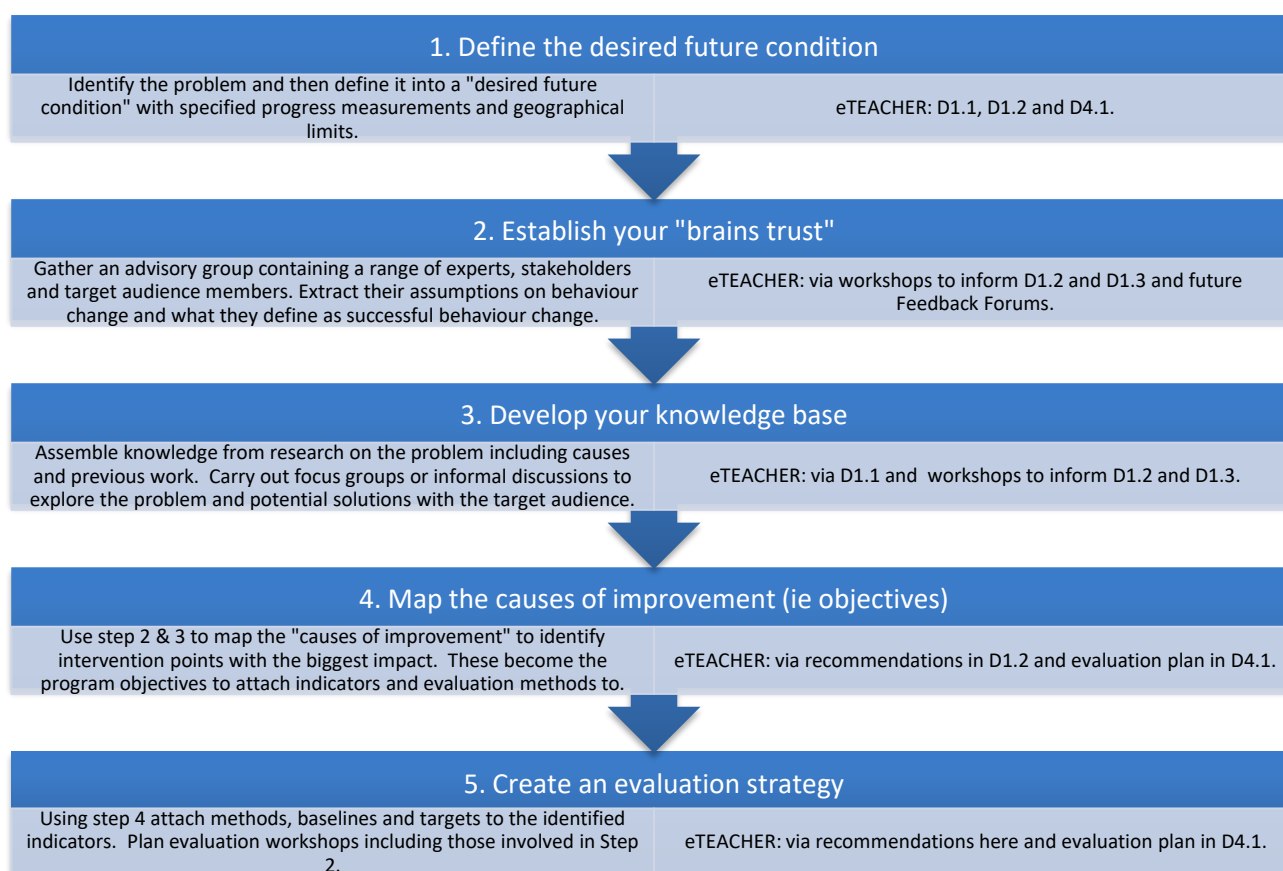
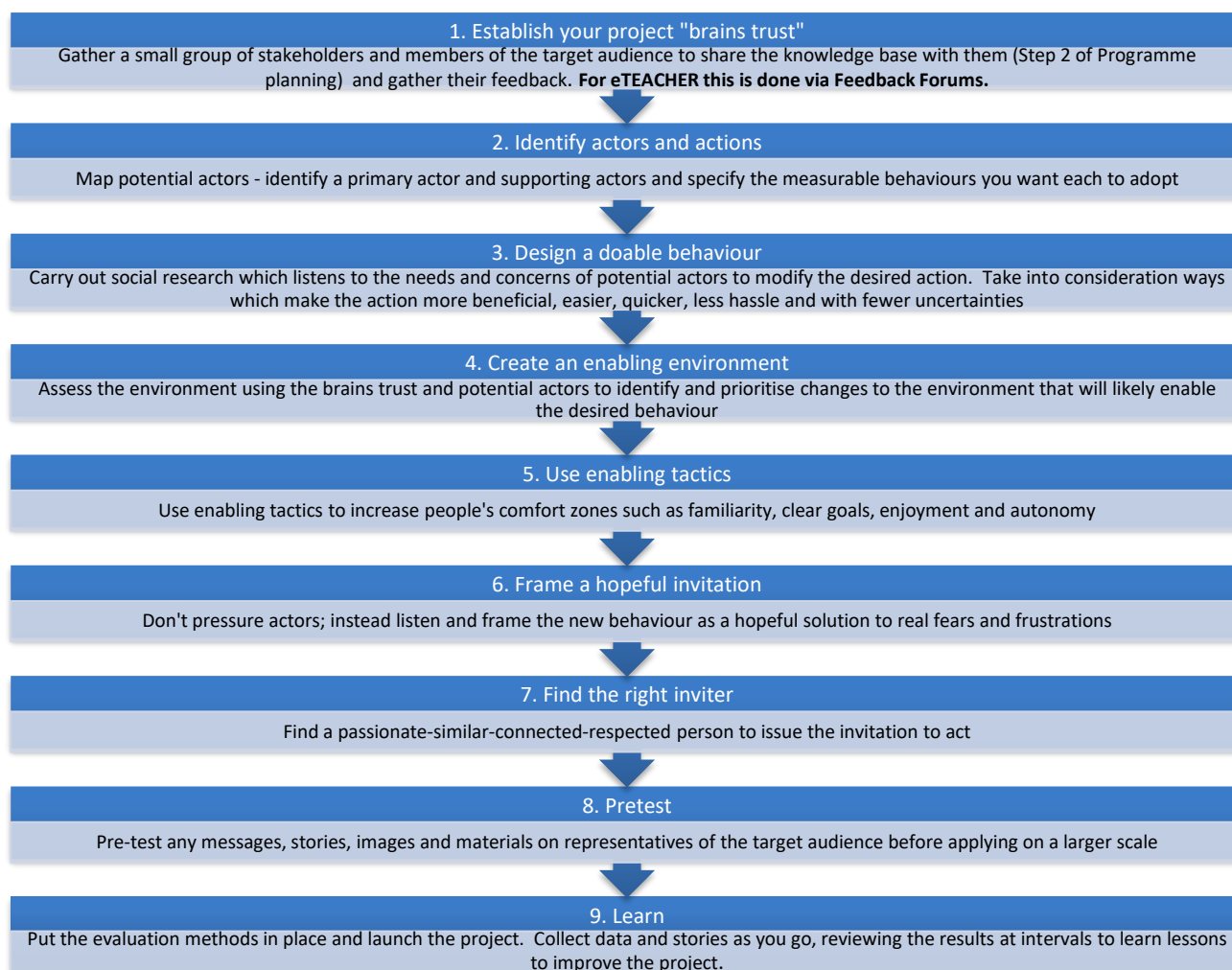


Figure 1 The Enabling Change process as applied at Programme level



At Programme level, Figure 1 highlights how eTEACHER has put the general Enabling Change principles into practice via Work Package 1 during the first year of the project. Initial user engagement and desk-based research has been used to implement steps 2 to 4. This has created a platform for continued user engagement in years 2 and 3 (step 2) as specified in D1.4 (Reeves, Morton & Bull, 2018), and has informed eTEACHER's evaluation strategy, as described in D4.1 (Peralta et al, 2018).

The project level principles of employing Enabling Change are shown in Figure 2.



**Figure 2 The Enabling Change process as applied at Project level**

## 1.2 Applying Enabling Change to eTEACHER

Within D1.4 (Reeves, Morton & Bull, 2018), the Enabling Change process was clustered and addressed according to two broad phases of the eTEACHER project (Table 1) with recommended actions for each phase. Detailed explanation is available in D1.4 (Reeves, Morton & Bull, 2018).

Table 1 Enabling Change Project level principles mapped to eTEACHER Actions

Phase	Recommend Action	Enabling Change Principles
Development (year 2)	A: Identify stakeholders and their role in engaging with eTEACHER.	1. Establish your project brains trust ( <i>Feedback Forum members</i> ). 2. Identify Actors and Actions. 7. Find the Right Inviter.
	B: Embed user feedback and behaviour change theory into eTEACHER development process.	3. Design a doable behaviour. 4. Create an enabling environment. 5. Use Enabling Tactics. 8. Pre-test.
Implementation and Evaluation (year 3)	C: Secure participation of target users.	6. Frame a hopeful intervention. 7. Find the right inviter.
	D: Embed user feedback into evaluation process.	9. Learn.

For eTEACHER the project's "brains trust" refers to the members of the Feedback Forum for each pilot building. Drawing upon Robinson's eTEACHER framework for project-level design, four recommended actions and associated tasks for eTEACHER implementation were put forward in D1.4, linked to each of the nine project planning principles within *Enabling Change*, these are summarised in Table 2.

Table 2 Actions, Tasks and Responsibilities

Recommend Action	Tasks for Partners	Enabling Change Principles	Responsible Partners
<b>A: Identify stakeholders and their role in engaging with eTEACHER</b>	(i) Identify and maintain a list of users (both general roles and specific individuals) and their potential involvement in developing eTEACHER. (ii) Identify potential "Right Inviters" – users who can engage others in using eTEACHER. (iii) Establish a feedback forum for each pilot site, which is engaged with at least monthly in relation to the tasks below. This engagement should constitute at least three face-to-face group meetings per year and complementary informal feedback as required (e.g. via email or phone).	1. Establish your project brains trust ( <i>Feedback Forum members</i> ) 2. Identify Actors and Actions 7. Find the Right Inviter	<b>AGE, ICPE, NCC</b> for each respective pilot site  <b>DMU</b> to provide mentoring support
<b>B: Embed user feedback and behaviour change theory into eTEACHER development process.</b>	(i): Use behaviour change theory (i.e. COM-B, Robinson's principles for Enabling Change and recommended Behaviour Change Techniques) to inform eTEACHER design (ii): Develop a pretesting plan, specifying when and how users offer feedback (iii) Develop questions and pre-test materials for users to engage with (iv) Consult with users at pilot sites using pre-test materials	3. Design a doable behaviour. 4. Create an enabling environment. 5. Use Enabling Tactics. 8. Pre-test.	(i), (ii) and (iii): <b>ASC</b> for WP3; <b>GRA</b> for WP2 (iv): <b>AGE, ICPE, NCC</b> for each respective pilot site  <b>DMU</b> to provide mentoring support
<b>C: Secure participation of target users</b>	(i) Develop engagement plan to secure participation by target users, using Enabling Change principles (ii) Develop materials/messages to engage users (iii) Consult with users at each pilot site to pre-test messages	6. Frame a hopeful intervention. 7. Find the right inviter.	(i), (ii): <b>ICE</b> (iii): <b>AGE, ICPE, NCC</b> for each respective pilot site  <b>DMU</b> to provide mentoring support
<b>D: Embed user feedback into evaluation process</b>	(i) Develop plan to pre-test user feedback into evaluation design (year 2) and to elicit feedback to enhance implementation (year 3) (ii) Develop materials to elicit feedback (iii) Consult with users at each pilot site	9. Learn	(i), (ii): <b>CEM</b> (iii): <b>AGE, ICPE, NCC</b> for each respective pilot site  <b>DMU</b> to provide mentoring support



The framework can be understood in terms of its alignment to three key aspects of eTEACHER:

- **Development**
  - Via eTEACHER work packages 2 and 3, with support from work packages 1 and 7
  - Enabling Change Recommended Actions A and B
- **Implementation and Evaluation**
  - Via eTEACHER work package 4
  - Enabling Change Recommended Actions C and D
- **Exploitation, Dissemination and Communication**
  - Via eTEACHER work packages 5 and 6
  - Enabling Change Recommended Action C

An outline timetable for developing the recommended actions with suggested dates is shown below (Table 3), this was amended from the original presented in eTEACHER's Deliverable 1.4 due to the timing of a General Assembly project meeting. Specific plans were confirmed through dialogue between leaders of Actions A, B, C and D to best align with the availability of Feedback Forum members, the timeline of development of eTEACHER and linkages to eTEACHER project meetings and milestones. These discussions, following a knowledge exchange activity, were the start of DMU's mentoring activity for the eTEACHER project.

**Table 3 Potential Timeline for Stakeholder Engagement**

Year	Year 2: eTEACHER Development				Year 3: Implementation and Evaluation		
Stage	Planning	Scoping	Early Prototype	Late Prototype	Initial Feedback	Heating Season Feedback	Final Feedback
Task: Identify FF members and plan for engagement	By end Nov 18						
Task: Prepare resources and run Feedback Forums (FF)		FF1 (Dec'18-Jan'19)	FF2 (Mar-April'19)	FF3 (Jun-July'19)	FF4 (Oct-Nov'19)	FF5 (Jan-Feb'20)	FF6 (May'20)
Task: Informal Feedback		Ongoing as needed. Some engagement at least once per month.					
Task: Apply behaviour change theory to interventions	Ongoing as eTEACHER tool is developed in year 2						





## 2 Mentoring Activity during Year 2 of eTEACHER

During the second year of the project, various mentoring activity was carried out. This included a variety of methods from one to one calls, project meetings, knowledge exchange sessions and supplementary reports and documents. Table 4 below describes the mentoring activity carried out and included details on which project partners were involved in the activity and what the impact was resulting from the task. It should be noted that the listed tasks in Table 4 are only those related to the mentoring provided to put the “Enabling Change” recommendations into action. DMU also provided input on other project elements such as dissemination activities, exploitation activities and general social science perspectives to tasks during the project’s second year.

**Table 4 Mentoring Activity carried out by DMU during 2<sup>nd</sup> year of eTEACHER project**

Date	Mentoring task description	Partners involved	Impact from task	Available
14 Sept 2018	WP1 Knowledge Exchange meeting	Open to ALL	Key recommendations and design brief suggestions resulting from WP1 social studies summarised for all partners	N/A
27 Sept 2018	Design brief incorporating D1.1, D1.2M D1.3 and D1.4 available to all partners and included in D1.2 Appendices	Open to ALL	Clear recommendations for design of eTEACHER tool presented	N/A
14 Nov 2018	Feedback Forum supporting materials and documentation emailed out	CEM, DMU, NCC, ICPE, AGE	Key elements of implementing the “Enabling Change” framework in both the development and installation project phases highlighted. Relevant project partners now aware of responsibilities and requirements of tasks	Appendix 1
28/29 Nov 2018	Project Face to Face meeting	ALL	Summary of all WP1 findings presented to partners. Discussion around use of Feedback Forums and content refinement following key recommendations from D1.4 being explained	N/A
5 Dec 2018	Information request for Feedback Forums	ALL	Information request sent to project partners to revise the original FF timeline from D1.4 and give pilot coordinators more detailed information relating to content and structure of FFs	N/A
14 Dec 2018	WP2 User Feedback Plan	CEM, DMU, GRA	Utilise Feedback Forum 1 as ideal opportunity to raise awareness of Pulse system and encourage user engagement	N/A
14 Dec 2018	Feedback Forum Information request collation	DMU	Revision of the original D1.4 FF plan with input from project partners regarding content and timings	N/A
17 Dec 2018	WP3 WebEx call	CEM, DMU, ASC	Discussions around best gamification potential in pilots and preliminary thoughts on notifications and “missions”	N/A
8 Jan 2019	Revised Feedback Forum Plan circulated	ALL	All project partners aware of the revised plan following discussions and collation of requirements from various work packages.	Appendix 2
29 Jan 2019	Feedback Forum 1 Information Session	CEM, DMU, NCC, ICPE, AGE	Materials relating to FF1 to be distributed to all relevant project partners	N/A
29 Jan 2019	Feedback Forum 1 Materials distributed	DMU, NCC, ICPE, AGE	Pilot coordinators had all materials available to now hold FF1 in pilot buildings	Appendix 3
1 May 2019	Feedback Forum 1 Summary Report distributed	ALL	All findings relating to FF1 now available to partners	Appendix 4
7/8 May 2019	Project Face to Face meeting	ALL	Reminder for partners of mentoring support available from DMU regarding WP1 findings linking to other work packages	N/A



21 May 2019	WP4 Pilot characterisation meeting	CEM, DMU	DMU to produce a behaviour survey which can measure baseline behaviour and resulting behaviour change from eTEACHER tool as part of the evaluation strategy	N/A
21 May 2019	WP2 Pilots and Pulse monitoring meeting	CEM, DMU, GRA	Utilising FF1 findings and DMU experience for recommending best Pulse system implementation and encouraging user engagement with system	N/A
14 June 2019	Knowledge exchange transfer WP1/WP2 meeting	CEM, DMU, NCC, ASC, EAS, AGE, ICPE	Feedback Forum 2 activities to include user feedback on ideal/preferred “hints” and “missions” to help ensure the WiA knowledge based model can be tailored to individual pilot buildings	N/A
20 June 2019	Feedback Forum 2 Information Session	CEM, DMU, NCC, ICPE, AGE	Materials relating to FF2 to be distributed to all relevant project partners	N/A
24 June 2019	WP1/WP3 WebEx meeting	CEM, DMU, ASC, NCC, AGE, ICPE	Incorporation of social network preference questions into design of FF2 activities	N/A
25 June 2019	Feedback Forum 2 Materials distributed	DMU, NCC, ICPE, AGE	Pilot coordinators had all materials available to now hold FF2 in pilot buildings	Appendix 5
10 July 2019	Project WebEx – FF2 initial findings reported (UK) relating to app preferences	ALL	Details given regarding FF2 findings from UK pilots relating to preferences in content available in eTEACHER tool	N/A
12 July 2019	Building user behaviour survey produced	CEM, DMU, NCC, AGE, ICPE	Pilot coordinators to translate then DMU will transfer to online platform and distribute links for the relevant pilot buildings	Appendix 6
31 July 2019	Feedback Forum timeline reviewed following feedback at mid-term review meeting	CEM, DMU, NCC, ICPE, AGE	Following EU Project Advisor feedback timeline reviewed so that FF4 now occurs in December 2019 and FF5 moved forward to March/April 2020	N/A
5 Aug 2019	Project WebEx – FF2 findings reported (UK & Romania) relating to app, hints and mission preferences	ALL	Details given regarding FF2 findings from UK and Romanian pilots relating to preferences on hints and missions recommended by the eTEACHER tool	N/A
17 Sept 2019	Building User Behaviour Survey – English, Romanian and Spanish links distributed	CEM, DMU, NCC, ICPE, AGE	Baseline behaviour can be analysed in each pilot building – relevant to D4.2	N/A
19 Sept 2019	Feedback Forum 3 Information Session	CEM, DMU, ICPE, AGE, NCC	Incorporation of discussion points around distributing survey and alerting building users to eTEACHER tool once implemented. Slide also added to materials raising awareness of users to	N/A
19 Sept 2019	Feedback Forum 3 Materials distributed	DMU, NCC, ICPE, AGE	Pilot coordinators had all materials available to now hold FF2 in pilot buildings	Appendix 7
30 Sept 2019	Feedback Forum 2 Summary Report distributed	ALL	All partners provided with summary of findings from Feedback Forum 2 relating to app preferences	Appendix 8



### 3 Summary

*Enabling Change* is an evidence-based approach for developing and delivering behaviour change interventions (Robinson, 2012) and advocates a participatory approach to project development with relation to specific interventions. During Year 2 suggested actions, tasks and responsibilities relating to applying the Enabling Change process were suggested for the eTEACHER project. To support project partners with this, WP1 was responsible for Project Development Mentoring during the second year of the eTEACHER project. Section 2 of this report has presented the related mentoring activities carried out for supporting the application of the Enabling Change process. This mentoring support has included a variety of methods from one to one calls, project meetings, knowledge exchange sessions and supplementary reports and documents. A key focus has been on supporting the successful facilitation of Feedback Forums in the pilot buildings. Feedback Forums within the eTEACHER pilot buildings are a means to continue building user engagement throughout the development phase of the project but also act as vital feedback mechanisms from actual building users, and ultimately the eTEACHER tool users, to aid the development and implementation phase of the project. This support has included fielding one-to-one questions, preparation of materials for each session currently (and in Year 3 of the project), holding informational training sessions before each FF with pilot coordinators, analysing findings and producing summary reports for all project partners.

This report presents a summary of the support and mentoring meetings carried out, but also acts as a reference document by including all supporting materials produced by DMU in Appendices. These documents include initial planning documents as well as the individual documents and materials relevant to each Feedback Forum. The summary reports for both Feedback Forum 1 and Feedback Forum 2 are also included in the Appendices to show the wealth of data collected during these user engagement sessions.

Further Feedback Forum sessions are planned within the final year of the eTEACHER project and similar materials and summary reports will be produced for these also, generating a rich dataset on user preferences, feedback and use of an ICT-based behaviour change tool.



## 4 References

Morton, A., Reeves, A. and Bull, R. (2018a). Key Concepts Summary. Deliverable 1.1 of the eTEACHER project funded under the European Union's Horizon 2020 research and innovation programme GA No: 768738. Brussels: eTEACHER consortium.

Morton, A., Reeves, A. and Bull, R. (2018b). Analysis of end-user behaviour in relation to case study buildings. Deliverable 1.2 of the eTEACHER project funded under the European Union's Horizon 2020 research and innovation programme GA No: 768738. Brussels: eTEACHER consortium.

Peralta, J. J., et al. (2018). Evaluation Methodology and preliminary pilots' descriptions. Deliverable 4.1 of the eTEACHER project funded under the European Union's Horizon 2020 research and innovation programme GA No: 768738. Brussels: eTEACHER consortium.

Preston, S. (2018). ICT-based engagement for energy efficiency in buildings. Deliverable 1.3 of the eTEACHER project funded under the European Union's Horizon 2020 research and innovation programme GA No: 768738. Brussels: eTEACHER consortium.

Reeves, A., Morton, A. and Bull, R. (2018). Applying "Enabling Change" to eTEACHER. Deliverable 1.4 of the eTEACHER project funded under the European Union's Horizon 2020 research and innovation programme GA No: 768738. Brussels: eTEACHER consortium.

Robinson, L. (2011) Enabling Change Process: [http://enablingchange.com.au/enabling\\_change\\_process.pdf](http://enablingchange.com.au/enabling_change_process.pdf), [Accessed on 01.09.18]

Robinson, L. (2012). *Changeology*. Totnes, Devon: Green Books.



## Appendices

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## 1 Appendix 1 - Supporting materials

All pilot building coordinators were provided with materials for delivering each of the Feedback Forums ahead of the meeting dates. These materials are typically designed to ensure consistency is achieved across all pilot building feedback forums. Standard templates were provided as follows in a supporting materials document circulated to project partners in November 2018. The supporting materials included;

- 1. Template for identifying Feedback Forum members (Section 1.1):** This template can be used by the pilot building coordinators to identify and record relevant building users who are interested in being part of the building's Feedback Forum. Ideally a good representation of all building user types shall be included in the Feedback Forum so the second table helps to clearly identify if this is being met, if not, what representation the other building users have.
- 2. Consent form for Feedback Forums (Section 1.2):** This template expands on the eTEACHER consent form to be focused particularly on the Feedback Forums. Therefore it details an overview of the project, the multiple purposed meetings, the data which will be collected and the participant's anonymity. It is important that we get the participants consent so that we can utilise the rich data gained from holding these Feedback Forums in each pilot building.
- 3. Feedback Forum Facilitators Guide Template (Section 1.3):** Each Feedback Forum should have a Facilitators Guide created and distributed ahead of the meeting. This template shows the suggested format of the Feedback Forum meetings including a welcome and general housekeeping items, an ice-breaker (may not be needed in later Feedback Forums), an introduction to the session, relevant topic sections (including questions, prompts and activity details) and a wrap up section. This template also allows for detailed instructions to be given to facilitators relating to when materials are distributed and what information is deemed of importance and therefore highlights to facilitators what should be recorded/noted during the session.
- 4. Feedback Forum Introduction Presentation Template (Section 1.4):** This template has utilised the standard eTEACHER presentation but it has been simplified for the building user audience and the relevant information relating to Feedback Forums has been added. It is envisaged that this template can be used for the first couple of Feedback Forums as a general introduction to the project and purpose of the meetings but may not be needed in the later Feedback Forums. There is a slide in the template which indicates where associated slides for each Feedback Forum can be added. These additional slides (if needed) will be added and the file distributed to the pilot coordinators ahead of the relevant Feedback Forum.
- 5. Feedback Forum Reporting Template (Section 1.5):** This template should be used by the pilot building coordinators to report back the findings of each Feedback Forum. This information will then be used to evaluate the Enabling Change process and/or aid the development and implementation of the eTEACHER tool in the associated building.



6. **Summary of Enabling Change framework stages and actions within eTEACHER (Section 1.6):** This can be used as a checklist and reference document for each of the planned Feedback Forums. Detailing the links with D1.4 objectives, purposed topics and suggested timescales.

## 1.1 Template for identifying Brains trust/Feedback Forum members

Pilot Site: \_\_\_\_\_

**Table of Feedback Forum contacts**

Name	Role(s)	Email	Tel	Other comments
<i>Ann Example</i>	<i>Resident; Chair of Residents' Association</i>	<i>annex@gmail.com</i>	<i>987-654-321</i>	<i>Can't attend meetings on Tuesday evenings.</i>

**Checklist of representation of each relevant building user role**

Building User Role	How many are taking part in Feedback Forum	Comments
<i>e.g. Visitor</i>	<i>0</i>	<i>Views represented via bookings co-ordinator</i>



## 1.2 Brains Trust and Feedback Forum member's consent form template

### Informed Consent Form (Feedback Forums)

This Informed Consent Form has two parts:

- **Information Sheet** (to share information about the study and the feedback forums with you)
- **Certificate of Consent** (for signatures if you agree)

#### Part I: Information sheet

**eTEACHER – End-user Tools to Empower and raise Awareness of behavioural CHange towards EneRgy efficiency**

#### *Information Sheet for Feedback Forum Participants*

##### Introducing the project

eTEACHER is a 3-year project funded by the European Union Horizon 2020 research and innovation programme under grant agreement no. 768738. The project is coordinated by Dr. Noemi JIMENEZ-REDONDO from the Spanish engineering company CEMOSA.

eTEACHER is researching the use of digital technologies in engaging and empowering energy end-users to reduce energy consumption and the environmental impact of buildings. Behaviour change initiatives could have a significant impact on saving energy in buildings. eTEACHER aims to develop an ICT-based tool which can empower energy end-users to save energy, improve the indoor environmental quality and help share knowledge, facilitate collaboration and enable behavior change.

You are one of the individuals across the council that have agreed to be involved in the project, the success of which depends on forming an initial 'user-group' of a cross section of employees - those with formal responsibilities for energy management and those with none.

##### What will participation entail?

eTEACHER would like to invite you to join the building user feedback forum (see proposed meeting dates below). Experts from the eTEACHER project team will meet with the group to discuss progress of the project but mainly to get feedback on ideas and issues in the development and implementation of the eTEACHER tool within your building. We want to hear your input to help shape a better tool for your building! There will be up to 6 feedback forums held over the next two years of the project, detailed below. It is planned that during these feedback forums the voices of building users can be factored into the design, development and ultimate implementation of the final eTEACHER tool.

	Meeting Date (Exact dates to be confirmed)	Topic
Feedback Forum 1	December 2018 – January 2019 (TBC)	Introduction to the project and the purpose of feedback forums
Feedback Forum 2	March - April 2019 (TBC)	Overview of initial design ideas





Feedback Forum 3	June - July 2019 (TBC)	Feedback on Prototype design and how it fits with your building and other building users
Feedback Forum 4	October – November 2019 (TBC)	Initial feedback following the implementation of the eTEACHER tool within your building
Feedback Forum 5	January - February 2020 (TBC)	Feedback following use of the eTEACHER tool over winter
Feedback Forum 6	May 2020 (TBC)	Final evaluation, feedback and recommendations for the eTEACHER tool

### The purpose of this consent form

To give you a clear explanation of the nature of the research, as well as your role in it as feedback forum participants.

If you agree to participate in the feedback forums, you will be asked to contribute to discussions around the development and implementation of an ICT-based tool within this building. The discussions may take the form of a roundtable discussion, interactive activity or feedback on different design ideas.

Any information you supply will be used exclusively for the purpose of the eTEACHER project and will not be passed to others or used for any other purpose. Information, if published, will be anonymized, so that individuals cannot be identified. Notes from the meetings will be taken. The data collected will be coded using an identification number and, therefore, will be anonymous.

The data will be held securely and disposed of when the purpose of the collection is over.

Participation in the feedback forums is completely voluntary. You are at liberty to withdraw at any time without prejudice or negative consequences.

If you have any questions, you may ask them now or later, even after the study has started. If you wish to ask questions later, you may contact any of the following:

### NAME OF THE PILOT COORDINATOR: ICPE/NCC/AGENEX (*Delete as appropriate*)

- Address: **[to be included]**
- Telephone number: **[to be included]**
- E-mail: **[to be included]**

You can withdraw from the study at any time without it harming you in any way.

Thank you in advance for your participation.

Please bring your completed and signed consent form (Part II, below) to the first meeting.



## Part II: Certificate of Consent

Issue	Respondent's initials
I have read the information about the project, as provided in this form.	
I have had the opportunity to ask any questions related to this study and participation in the feedback forums, and received satisfactory answers to my questions, and any additional details I wanted.	
I am aware that excerpts from the discussions within feedback forums may be included in publications to come from this research. Quotations will be kept anonymous.	
I give permission for feedback forums to be recorded using audio recording equipment, if required.	
I understand that relevant sections of the data collected during the study may be looked at by individuals from the eTEACHER Project, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my responses.	

**With full knowledge of all foregoing, I agree to participate in the eTEACHER feedback forums.**

I agree to being contacted again by the researchers if my responses give rise to interesting findings or cross references.

☐ No

☐ Yes

If yes, my preferred method of being contacted is:

☐ Telephone: .....

☐ Email: .....

☐ Other: .....

Participant Name	
eTEACHER building	
Building user role (e.g. staff, occupant, visitor etc.)	
Date	
Participant Signature	



### 1.3 Feedback Forum Facilitator's Guide Template

Welcome and introduction		
Timing		Facilitator notes
10 minutes	<ul style="list-style-type: none"> <li>• <b>Welcome</b> participants and thank them for agreeing to be part of the focus group.</li> <li>• <b>Introduce</b> yourself and the assistant facilitator(s) [if appropriate].</li> <li>• Explain the general <b>purpose</b> of the discussion:             <ul style="list-style-type: none"> <li>○ "We are coming together today to talk about the eTEACHER project – in particular we want to hear your thoughts, opinions and ideas."</li> </ul> </li> <li>• Explain <b>anonymity</b> of opinions shared:             <ul style="list-style-type: none"> <li>○ "We will not identify anyone by name in our report. You will remain anonymous."</li> </ul> </li> <li>• Explain the need for <b>honesty</b>:             <ul style="list-style-type: none"> <li>○ "We need your input and want you to share your honest and open thoughts with us."</li> </ul> </li> <li>• Explain that there are <b>no 'right' or 'wrong answers</b>.             <ul style="list-style-type: none"> <li>○ "Every person's ideas and opinions are important. Speak up whether you agree or disagree. We want to hear a wide range of opinions."</li> </ul> </li> <li>• Set out <b>ground rules</b>:             <ul style="list-style-type: none"> <li>○ "My role here is to guide the discussion. We want you to do the talking. We would like everyone to participate. Speak up, one at a time and respect the opinions of others. I may call on you if I haven't heard from you in a while."</li> </ul> </li> <li>• Go through any <b>health and safety</b> procedures for the building. Toilets, fire drills. Ask that participants kindly mute or switch off mobile phones to avoid distraction – if appropriate.</li> <li>• Ask participants to read and sign the consent form.</li> <li>• <b>[If appropriate]</b> Explain the presence and purpose of <b>recording equipment</b> (to help facilitator write up notes later rather than during the focus group) and ask for permission.</li> <li>• Explain that <b>discussion notes</b> will be analysed and included in a report but no personal data will be shared.</li> </ul> <p style="text-align: right;">*Facilitator starts digi-recorder if using.*</p>	<p>[Hand out consent forms to be signed before proceeding with the discussion, if not already completed].</p>



Icebreaker exercise		
Timing		Facilitator notes
5 minutes	<p><i>Facilitator: explain that before we go along it would be nice to be introduced to each other.</i></p> <p>Ask participants to pair up and find out a bit more about each other, and then introduce the person next to them:</p> <ul style="list-style-type: none"> <li>○ What type of building user are they?</li> <li>○ How long have they worked/lived in the building?</li> <li>○ What is their favourite thing about the building?</li> </ul>	[Facilitator to note down participants if not already recorded, particularly building user type and favourite things about building]

Introduction: eTEACHER and Feedback Forums		
Timing	Guideline questions	Facilitator notes
20 minutes	<p><i>Facilitator: explain that: We'd like to start off by talking a bit about the eTEACHER project and the purpose behind our use of Feedback Forums and your involvement today.</i></p> <p><i>Facilitator: ask if participants have any questions before proceeding to slides relevant to the topics being covered in the Feedback Forum.</i></p>	[Show the Introduction Presentation template slides explaining the project in a bit more detail.]

Topics: *Title*		
Timing	Guideline questions	Facilitator notes
XX minutes	<p><i>Facilitator: explain new topic/discussion area: We'd like to continue this conversation with a discussion on...</i></p> <p><i>*Example questions to be provided and appropriate timescales for any appropriate activities being carried out as part of the discussion topic*</i></p>	Record notes on discussion points – in particular quotes of interest.


		<p>[Facilitator to use/show appropriate materials provided to assist discussion on this topic]</p> <p>[Facilitator to encourage discussion by use of prompt questions provided]</p>
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Consolidation and close		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator asks respondents if there is anything that they would like to ask.</i></p> <p><i>Facilitator makes closing remarks, summing up what has been learnt and thanking respondents for participating. Facilitator reiterates anonymity and what the findings will be used for.</i></p> <p><i>Facilitator switches off the digital recorder (if using).</i></p> <p><i>Facilitator collects any materials which may have been handed out at the beginning or during the session.</i></p>	

*The Introduction section (orange coloured box) in this template does not need to be included in the facilitators guide for all Feedback Forums but should be included in the first one or two to ensure participants understand the project and the reasoning behind holding the Feedback Forums.*




## 1.4 Feedback Forum Introduction Presentation template




**eTEACHER**  
Empowering Energy Education

End-user Tools to Empower and raise  
Awareness of behavioural **CH**ange  
towards **En**eRgy efficiency

Innovation Action – GA n°768738


 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 768738



### The project

eTEACHER is a three year project (Oct 2017 – Sept 2020) funded by the Horizon 2020 EU Innovation Action which aims to empower end-users in buildings to become more energy efficient.

It will achieve this by designing ICT solutions which will help users become more aware of their energy consumption.





## The consortium

There are 12 project partner organisations from six European countries who contribute their expertise at different stages. These include a university, local authorities, non-profit organisations and small businesses.





















## Objectives

The eTEACHER solution aims to help building users feel more comfortable in their environment, be it their home, workplace or medical centre.

Therefore their personal wellbeing could stand to become enhanced through the IT tools developed.









## Where is eTEACHER?


The eTEACHER IT toolbox will be trialled in 12 pilot buildings across Romania, Spain and the UK. These buildings vary greatly in terms of their age and their kind of use and audience.

<b>12</b>	<b>3</b>	<b>5,000</b>	<b>3</b>
PILOTS	EUROPEAN COUNTRIES	PEOPLE INVOLVED	CLIMATIC AREAS

### eTEACHER IS DEMONSTRATED IN...


 <p><b>SPAIN</b> 2 HEALTHCARE CENTRES 2 SCHOOLS 1 RESIDENTIAL BUILDING 1 OFFICE</p>	 <p><b>UNITED KINGDOM</b> 1 SCHOOL 1 OFFICE</p>	 <p><b>ROMANIA</b> 4 RESIDENTIAL BUILDINGS</p>
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## Feedback Forums

eTEACHER wants to implement Feedback Forums (FF) in each of the pilot buildings to improve the design and implementation of the tool developed.




Feedback Forums are a group of important building users, representing all types of user, but ultimately those who will be using the end tool. The aim of the FF is to collect honest feedback and opinions relating to the ideas of our project.





## Your voice



Your input, opinions and feedback are vital for the project. We want to ensure that the eTEACHER tool meets your needs, the buildings needs and is something that you will want to use.


Remember there is no right or wrong answers in these meetings – we are really just wanting to hear the honest opinions of building users.




## \*Title\*

**\*Slides relating to specific Feedback Forum\***

*(Intro slides do not need to be used in all FF following the first meeting – but may be useful as reminders of the project for the first couple of Feedback Forums – especially if different members of the Brains Trust attend)*



## Stay in touch




Follow us on

Website – [eteacher-project.eu](http://eteacher-project.eu)

Twitter - [@eteacherEU](https://twitter.com/eteacherEU) #eteacherEU


LinkedIn - [eTEACHER - end-users'tools to empower energy efficiency](https://www.linkedin.com/company/eTEACHER-end-users'tools-to-empower-energy-efficiency)



Contact us

[coordinator@eteacher-project.eu](mailto:coordinator@eteacher-project.eu)

[communication@eteacher-project.eu](mailto:communication@eteacher-project.eu)





**eTEACHER**  
Empowering Energy Education

## THANK YOU

End-user Tools to Empower and raise  
Awareness of behavioural **CH**ange  
towards **En**eRgy efficiency

Innovation Action - GA n°768738



## 1.5 Feedback Forum Reporting Template

A report for each Feedback Forum should be prepared by the facilitators and sent to CEM and DMU to ensure that the findings can be collated and disseminated with the relevant project stakeholders. The report should be sent in English with relevant quotes translated.

For consistency reasons results of each Feedback Forum should be reported in the specific format described below.

### 1. *Date/place/time that the Feedback Forum took place and number of participants (brains trust members)*

Country	
eTEACHER pilot building	
Date	
Number of participants	

### 2. *Short description of arranging Feedback Forum*

Briefly describe: How where the participants informed about the feedback forum? Was it difficult for participants to attend the feedback forum? Any other problems with feedback forum?

Comments

### 3. *Executive Summary*

Write the main conclusions/recommendations resulting from the feedback forum. Detailed responses for specific topics covered in the Feedback Forum are addressed in Section 4 – this is for the key take home messages.

Comments

#### 4. *Summary of Feedback Forum discussion*

Quote the most repeated but also meaningful responses and write a short summary of the discussion made for each of the topics covered in the Feedback Forum.

Give the responses in “quotes” as uttered by the users and in bullets (bullet point list, one bullet per comment). Provide also the number of participants who expressed the same thoughts.

Where you find it necessary you can also quote a response that was an exception to show a different minority opinion or highlight an interesting idea. In this case, you should state that it is the response of only one participant.

#### Comments

## 1.6 Summary of Enabling Change framework stages and actions within eTEACHER

The following checklist summarises all actions and corresponding timescale recommendations, relating to the various stages and actions for implementing the Enabling Change framework within the eTEACHER pilot buildings and ensuring engagement with pilot building users.

Action	Description	Materials provided	Suggested timescale	Completed
Planning phase - Ai: Identify list of users and potential involvement in developing eTEACHER	Pilot site co-ordinators combine a list of existing contacts with further outreach (e.g. via email, posters, word of mouth) to develop a list of contacts who are interested in offering feedback to develop eTEACHER	Appendix B in D1.4	November 2018	
Planning phase - Ai: Maintain list of users and potential involvement in developing eTEACHER	Pilot site co-ordinators maintain (and add to, as needed) a list of contacts who are interested in offering feedback to develop eTEACHER	Appendix B in D1.4	Throughout Year 2 & Year 3	
Scoping phase - Aii, Aiii & Biv Aii: Identify potential "right inviters" Aiii: Establish feedback forum Biv: Consult with users at each pilot site to pre-test materials	An initial Feedback Forum meeting including: • Introductions and introduction to the role of the Feedback Forum • Summary of the aims and approach of eTEACHER – framed around the benefits to users • Discussion on identifying potential "right inviters" • Sharing of existing plans for feedback in relation to WP2, WP3 and WP4.	Where feedback is sought in relation to Work Packages, the leads for that WP should prepare materials in advance (e.g. slides, handouts, questions) for pilot site co-ordinators to put to members for specified feedback.	December 2018	
Early prototype phase – Aii & Biv Aiii: Establish feedback forum Biv: Consult with users at each pilot site to pre-test materials	Feedback Forum meeting • Focus on feedback to aid initial tool design – pre-test materials	Where feedback is sought in relation to Work Packages, the leads for that WP should prepare materials in advance (e.g. slides, handouts, questions) for pilot site co-ordinators to put to members for specified feedback.	March 2019	
Late prototype phase – Aiii & Cii Aiii: Establish feedback forum Biv: Consult with users at each pilot site to pre-test message	Feedback Forum meeting • Focus on feedback to aid initial tool design – pre-test messages	Where feedback is sought in relation to Work Packages, the leads for that WP should prepare materials in advance (e.g. slides, handouts, questions) for pilot site co-ordinators to put to members for specified feedback.	June 2019	
Initial feedback phase – Diii: Consult with users at each pilot site (user feedback)	Feedback Forum meeting involving recorded semi-structured focus group sessions during which users are able to: • Qualitatively describe their use to date of eTEACHER, observed use by others in their building and any changes in energy-related behaviour • Share evaluative feedback on eTEACHER's effectiveness, including strengths and potential improvements • Collaboratively analyse the factors influencing engagement with eTEACHER	Materials should be available based on the evaluation plan described in D4.1 (Peralta et al, 2018) to evaluate the impact of the eTEACHER tool.	October 2019	

	and its effectiveness in influencing changes in energy-related behaviour			
Heating season feedback phase – Diii: Consult with users at each pilot site (user feedback)	<p>Feedback Forum meeting involving recorded semi-structured focus group sessions during which users are able to:</p> <ul style="list-style-type: none"> <li>• Qualitatively describe their use to date of eTEACHER, observed use by others in their building and any changes in energy-related behaviour</li> <li>• Share evaluative feedback on eTEACHER's effectiveness, including strengths and potential improvements</li> <li>• Collaboratively analyse the factors influencing engagement with eTEACHER and its effectiveness in influencing changes in energy-related behaviour</li> </ul>	Materials should be available based on the evaluation plan described in D4.1 (Peralta et al, 2018) to evaluate the impact of the eTEACHER tool.	January 2020	
Final feedback phase - Diii: Consult with users at each pilot site (user feedback)	<p>Feedback Forum meeting involving recorded semi-structured focus group sessions during which users are able to:</p> <ul style="list-style-type: none"> <li>• Qualitatively describe their use to date of eTEACHER, observed use by others in their building and any changes in energy-related behaviour</li> <li>• Share evaluative feedback on eTEACHER's effectiveness, including strengths and potential improvements</li> <li>• Collaboratively analyse the factors influencing engagement with eTEACHER and its effectiveness in influencing changes in energy-related behaviour</li> </ul>	Materials should be available based on the evaluation plan described in D4.1 (Peralta et al, 2018) to evaluate the impact of the eTEACHER tool.	May 2020	

## 2 Appendix 2 - Revised Feedback Forum Plan.

Detailed description of content of each FF and responsibilities and actions going forward

Feedback Forum	Description	Materials provided	Suggested timescale	Responsibility and actions
Planning phase - Ai: Identify list of users and potential involvement in developing eTEACHER	Pilot site co-ordinators combine a list of existing contacts with further outreach (e.g. via email, posters, word of mouth) to develop a list of contacts who are interested in offering feedback to develop eTEACHER	Appendix B in D1.4	January 2019	NCC, AGE, ICPE
Planning phase - Ai: Maintain list of users and potential involvement in developing eTEACHER	Pilot site co-ordinators maintain (and add to, as needed) a list of contacts who are interested in offering feedback to develop eTEACHER	Appendix B in D1.4	Throughout Year 2 & Year 3	NCC, AGE, ICPE
Feedback Forum 1	<p>An initial Feedback Forum meeting including:</p> <ul style="list-style-type: none"> <li>• Introductions and introduction to the role of the Feedback Forum</li> <li>• Summary of the aims and approach of eTEACHER – framed around the benefits to users</li> <li>• WP2 activity – introduction to the feedback pulse system</li> <li>• Discussion based on what sort of messages would users respond to regarding the feedback system. What are they likely to feedback on? Use of buttons versus web page. Discussion around how to engage users within the building to give feedback via the system. Best location so users interact with system.</li> <li>• Discussion on identifying potential “right inviters”</li> </ul> <p>It is expected that this FF will be more like a focus group format with facilitation of active discussion between those attending.</p>	<p>DMU will provide slides, facilitators guide and any materials relevant to activities being carried out during session.</p> <p><b>WP2 to provide inputs to DMU to create these materials – see responsibility and actions column.</b></p>	January – February 2019	<p><b>NCC, AGE, ICPE</b> – Set up and carry out FF meeting</p> <p><b>WP2 (GRA)</b> – Provide visual aids to DMU to use in presentation slides such as photos or images of the pulse system and webpage. Provide DMU with list of example messages which discussions could be structured around – currently what questions are asked and about what (temperature, humidity etc.).</p> <p><b>DMU</b> – Put together slides, facilitators guide and handouts (if needed) and send to pilot coordinators. Hold an online meeting running through FF content and materials to answer any questions or make any suggested edits (WP2, NCC, ICPE &amp; AGE to attend).</p>
Feedback Forum 2	<p>Feedback Forum meeting</p> <ul style="list-style-type: none"> <li>• Quick intro to Feedback Forum concept and benefits to the project</li> <li>• Update on project progress – update on feedback collected via pulse system (specific to each building)</li> <li>• WP3 activity – activities based around what types of hints the users would find useful. What format they would like information to be presented in. Aesthetics of the design of the app. What sort of missions they would happily get involved with. Which visualisations would be favoured?</li> </ul>	<p>DMU will provide slides, facilitators guide and any materials relevant to activities being carried out during session.</p> <p><b>WP2, WP3 &amp; WP4 to provide inputs to DMU to create these materials – see responsibility and actions column.</b></p>	May – June 2019	<p><b>NCC, AGE, ICPE</b> – Set up and carry out FF meeting</p> <p><b>WP3 (ASC)</b> – Provide visual aids for DMU to use in presentation slides such as images or mock-ups of the app interface and screenshots</p> <p>Provide DMU with list of hints that you would like tested/prioritised by building users.</p> <p><b>WP2/WP4</b> – Provide summary of level of feedback being received from each building relating to the use of the pulse system</p>



				<p><b>DMU</b> – Put together slides, facilitators guide and handouts (if needed) and send to pilot coordinators. Hold an online meeting running through FF content and materials to answer any questions or make any suggested edits (WP3, NCC, ICPE &amp; AGE to attend).</p>
Feedback Forum 3	<p>Feedback Forum meeting</p> <ul style="list-style-type: none"> <li>• Focus on feedback to aid initial tool design – pre-test messages</li> <li>• Discussion based on app features and use – users feedback on initial thoughts and expected use of the app</li> <li>• Discussion based on roll-out – particularly if materials are to be used (what do users want to know about, what format are they most likely to take notice of etc.)</li> <li>• Discussion on identifying potential “right inviters”</li> </ul> <p>• Reminder on WP2 pulse feedback buttons</p> <p>It is expected that this FF will be a mix between focus group discussion between those attending and hands-on activities similar to the format delivered in WSA with handouts and stickers to prioritise features.</p>	<p>DMU will provide slides, facilitators guide and any materials relevant to activities being carried out during session.</p> <p><b>WP2, WP3, WP4 &amp; WP6 to provide inputs to DMU to create these materials – see responsibility and actions column.</b></p>	August – September 2019	<p><b>NCC, AGE, ICPE</b> – Set up and carry out FF meeting</p> <p><b>WP2/WP4</b> – Provide update on pulse feedback system use and if any additional information is needed from building users.</p> <p><b>WP3 (ASC)</b> – Provide DMU with visual aids of app and list of features on app. Any example mock-ups of app which can be shown to building users</p> <p><b>WP6</b> – Provide any materials which are being used for the rollout of the final tool (<b>if applicable</b>)</p> <p><b>DMU</b> – Put together slides, facilitators guide and handouts (if needed) and send to pilot coordinators. Hold an online meeting running through FF content and materials to answer any questions or make any suggested edits (NCC, ICPE &amp; AGE to attend).</p>
Feedback Forum 4	<p>Feedback Forum meeting</p> <ul style="list-style-type: none"> <li>• Discussion on use to date of eTEACHER, observed use by others in their building and any changes in energy-related behaviour</li> <li>• Evaluative feedback on eTEACHER’s effectiveness, including strengths and potential improvements</li> <li>• Collaboratively analyse the factors influencing engagement with eTEACHER and its effectiveness in influencing changes in energy-related behaviour</li> <li>• Interactive activity by users on use of features in app and awareness of hints/missions being used within app (discussion shall be encouraged during activities as to the reasons behind why functions/hints/missions not used by users and what elements users like, dislike, have potentially disengaged from)</li> </ul>	<p>DMU will provide slides, facilitators guide and any materials relevant to activities being carried out during session.</p> <p><b>WP4 to provide inputs to DMU to create these materials – see responsibility and actions column.</b></p>	January – February 2020	<p><b>NCC, AGE, ICPE</b> – Set up and carry out FF meeting</p> <p><b>WP4</b> – Provide update on use of tool in each of the pilot buildings, including any visual prompts which can be used in the presentation to enhance interest (data traces etc.). Provide list of any particular elements of use that would benefit from evaluation during the FF.</p> <p><b>DMU</b> – Put together slides, facilitators guide and handouts (if needed) and send to pilot coordinators. Hold an online meeting running through FF content and materials to answer any questions or make any suggested edits (NCC, ICPE &amp; AGE to attend).</p>



	It is expected that this FF will be more like a focus group format with facilitation of active discussion between those attending.			
Feedback Forum 5	<p>Feedback Forum meeting</p> <p>Discussion during session on the following points;</p> <ul style="list-style-type: none"> <li>• Qualitatively describe their use to date of eTEACHER, observed use by others in their building and any changes in energy-related behaviour</li> <li>• Share evaluative feedback on eTEACHER's effectiveness, including strengths and potential improvements</li> <li>• Collaboratively analyse the factors influencing engagement with eTEACHER and its effectiveness in influencing changes in energy-related behaviour</li> </ul> <p>It is expected that this FF will be more like a focus group format with facilitation of active discussion between those attending.</p>	<p>DMU will provide slides, facilitators guide and any materials relevant to activities being carried out during session.</p> <p><b>WP4 to provide inputs to DMU to create these materials – see responsibility and actions column.</b></p>	May 2020	<p><b>NCC, AGE, ICPE</b> – Set up and carry out FF meeting</p> <p><b>WP4</b> – Provide update on use of tool in each of the pilot buildings, including any visual prompts (data traces etc.) which could be of interest to those attending. Provide list of any particular elements of use that would benefit from evaluation during the FF.</p> <p><b>DMU</b> – Put together slides, facilitators guide and handouts (if needed) and send to pilot coordinators. Hold an online meeting running through FF content and materials to answer any questions or make any suggested edits (NCC, ICPE &amp; AGE to attend).</p>



### 3 Appendix 3 - Feedback Forum 1 Materials

#### 3.1 Feedback Forum 1: Facilitators Guide

Welcome and introduction		
Timing		Facilitator notes
10 minutes	<ul style="list-style-type: none"> <li>• <b>Welcome</b> participants and thank them for agreeing to be part of the focus group.</li> <li>• <b>Introduce</b> yourself and the assistant facilitator(s) [if appropriate].</li> <li>• Explain the general <b>purpose</b> of the discussion:               <ul style="list-style-type: none"> <li>○ “We are coming together today to talk about the eTEACHER project – in particular we want to hear your thoughts, opinions and ideas.”</li> </ul> </li> <li>• Explain <b>anonymity</b> of opinions shared:               <ul style="list-style-type: none"> <li>○ “We will not identify anyone by name in our report. You will remain anonymous.”</li> </ul> </li> <li>• Explain the need for <b>honesty</b>:               <ul style="list-style-type: none"> <li>○ “We need your input and want you to share your honest and open thoughts with us.”</li> </ul> </li> <li>• Explain that there are <b>no ‘right’ or ‘wrong answers</b>.               <ul style="list-style-type: none"> <li>○ “Every person's ideas and opinions are important. Speak up whether you agree or disagree. We want to hear a wide range of opinions.”</li> </ul> </li> <li>• Set out <b>ground rules</b>:               <ul style="list-style-type: none"> <li>○ “My role here is to guide the discussion. We want you to do the talking. We would like everyone to participate. Speak up, one at a time and respect the opinions of others. I may call on you if I haven't heard from you in a while.”</li> </ul> </li> <li>• Go through any <b>health and safety</b> procedures for the building. Toilets, fire drills. Ask that participants kindly mute or switch off mobile phones to avoid distraction – if appropriate.</li> <li>• Ask participants to read and sign the consent form.</li> <li>• <b>[If appropriate]</b> Explain the presence and purpose of <b>recording equipment</b> (to help facilitator write up notes later rather than during the focus group) and ask for permission.</li> <li>• Explain that <b>discussion notes</b> will be analysed and included in a report but no personal data will be shared.</li> </ul>	<p>[Refer to script provided under each slide if needed to support]</p> <p>[Hand out consent forms to be signed before proceeding with the discussion, if not already completed].</p>

	<i>*Facilitator starts digi-recorder if using.*</i>	
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Icebreaker exercise		
Timing		Facilitator notes
5 minutes	<p><i>Facilitator: explain that before we go along it would be nice to be introduced to each other.</i></p> <p>Ask participants to pair up and find out a bit more about each other, and then introduce the person next to them:</p> <ul style="list-style-type: none"> <li>○ What type of building user are they?</li> <li>○ How long have they worked/lived in the building?</li> <li>○ What is their favourite thing about the building?</li> </ul>	<p>[Facilitator to note down participants if not already recorded, particularly building user type and favourite things about building]</p>

Introduction: eTEACHER and Feedback Forums		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator: explain that: We'd like to start off by talking a bit about the eTEACHER project and the purpose behind our use of Feedback Forums and your involvement today.</i></p> <p><i>Facilitator: ask if participants have any questions before proceeding to slides relevant to the topics being covered in the Feedback Forum.</i></p>	<p>[Start the Presentation slides explaining the project in a bit more detail and the agenda for the session.]</p> <p>[Slides 1 – 8]</p>

Topics: Icebreaker - Pulse		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator: So to start we would like to ask you what do you think these buttons mean from your first impression</i></p>	<p><b>Record notes on discussion points.</b></p> <p>[Facilitator to encourage discussion by use of prompt questions provided on script]</p>



Topics: Pulse system		
Timing	Guideline questions	Facilitator notes
2 minutes	<i>Facilitator: Explain the Pulse system</i>	[Facilitator to use script provided on slides if required]

Topics: Indoor Environmental Quality		
Timing	Guideline questions	Facilitator notes
5 minutes	<i>Facilitator: Explain background of what is meant by Indoor Environmental Quality: eTEACHER is not only trying to save energy in this building but it is also attempting to improve the indoor environmental quality.</i>  Indoor Environmental Quality relates to...	[Facilitator to use script provided on slides if required]   [Slides 11]

Topics: Comfort activity		
Timing	Guideline questions	Facilitator notes
5 minutes	<i>Facilitator: Before eTEACHER can improve the IEQ for users we first need to understand more about users' comfort experiences and expectations.</i>  <i>Facilitator to encourage discussion around question examples given:</i>  When asked if you are comfortable, what do you typically think of/judge your comfort based on?  What might influence how comfortable you feel?	<b>Record notes on each of the discussion points – in particular quotes of interest.</b>  [Facilitator to encourage discussion by use of further prompt questions provided]  [Slides 12]

Topics: Your building activity		
Timing	Guideline questions	Facilitator notes



5-10 minutes	<p><i>Facilitator:</i> Now we want you to think about this building in particular, and how your comfort is affected within this building.</p> <p><i>Facilitator to encourage discussion around question examples given:</i></p> <p>Typically what do you think of the indoor environment in this building?</p> <p>Are there any specific factors in this building which affect your comfort regularly?</p> <p>Do you report any issues relating to your comfort in the building?</p> <p>If so how do you go about reporting issues, who do you contact? Does it typically result in changes being made which improves your comfort?</p>	<p>Record notes on each of the discussion points – in particular quotes of interest.</p> <p>[Facilitator to encourage discussion by use of further prompt questions provided]</p> <p>[Slides 13]</p>
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Topics: IEQ Monitoring		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator:</i> As we have already mentioned, eTEACHER is not only trying to improve energy use in this building but also improve the building environment. To do this we need to monitor the indoor environment using sensors but we mainly want to collect feedback from the users over how satisfied they are with the indoor environment – and this is where the smiley face buttons come into play!</p> <p><i>Facilitator to explain in more detail about the Pulse system and what data it collects</i></p>	<p>[Facilitator to use script provided on slides if required]</p> <p>[Slides 14 – 16]</p>

Topics: IEQ Questions		
Timing	Guideline questions	Facilitator notes
5-10 minutes	<p><i>Facilitator:</i> We know that part of collecting relevant data from building users involves asking the right question –</p>	<p>Record notes on discussion points – in particular quotes of interest or</p>



	<p>one that is easy to understand, not confusing and straight to the point.</p> <p><i>Facilitator to encourage discussion around question examples given: Which question do you think works the best?</i></p> <p>Which question do you think is the worst?</p> <p>Are there any shown that just wouldn't work in this building?</p> <p>Can you give any examples of alternative question examples that you think would work as a means of collecting feedback on how satisfied users are with the indoor environment in this building?</p>	<p>alternative suggestions given.</p> <p>[Slides 17]</p>
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Topics: Pulse support		
Timing	Guideline questions	Facilitator notes
5-10 minutes	<p><i>Facilitator: We want to ensure that the pulse system works in your building by understanding how we can best tailor its installation, therefore we have a couple of questions we would like to discuss with you today.</i></p> <ul style="list-style-type: none"> <li>• Should we change the question being asked throughout the duration of the project – so it is something new every few weeks?</li> <li>• Where is the best location for the buttons so that you can interact with them easily enough?</li> <li>• Would you use the webpage to leave more detailed feedback?</li> <li>• Will the QR code or email links help you use the feedback system?</li> </ul>	<p>Record notes on each of the discussion points.</p> <p>[Facilitator to encourage discussion by use of further prompt questions provided]</p> <p>[Slides 18]</p>

Consolidation and close		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator moves on to "Your responses" slide – thanks participants for their contributions and highlights</i></p>	<p>Record any notes of questions raised.</p>




	<p><i>anything of particular interest that came up during the session.</i></p> <p><i>Facilitators reminds participants of the importance of the Pulse system to the eTEACHER project. [Slide IEQ Monitoring – slide 20]</i></p> <p><i>Facilitator reiterates anonymity and what the findings will be used for.</i></p> <p><i>Facilitator asks respondents if there is anything that they would like to ask.</i></p> <p><i>Facilitator highlights participants' opportunities to keep up to date/stay in touch with project, slide 22.</i></p>	[Slides 19 – 23]
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### 3.2 Feedback Forum 1 Presentation Slides



**End-user Tools to Empower and raise  
Awareness of behavioural **CH**ange  
towards **EneR**gy efficiency**

Innovation Action – GA n°768738


 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 768738



## The project

eTEACHER is a three year project (Oct 2017 – Sept 2020) funded by the Horizon 2020 EU Innovation Action which aims to empower end-users in buildings to become more energy efficient.

It will achieve this by designing ICT solutions which will help users become more aware of their energy consumption.







## The consortium

There are 12 project partner organisations from six European countries who contribute their expertise at different stages. These include a university, local authorities, non-profit organisations and small businesses.



















## Objectives

The eTEACHER solution aims to help building users feel more comfortable in their environment, be it their home, workplace or medical centre.

Therefore their personal wellbeing could stand to become enhanced through the IT tools developed.





## Where is eTEACHER?

The eTEACHER IT toolbox will be trialled in 12 pilot buildings across Romania, Spain and the UK. These buildings vary greatly in terms of their age and their kind of use and audience.

<b>12</b>	<b>3</b>	<b>5,000</b>	<b>3</b>
PILOTS	EUROPEAN COUNTRIES	PEOPLE INVOLVED	CLIMATIC AREAS

**eTEACHER IS DEMONSTRATED IN...**




**SPAIN**  
 2 HEALTHCARE CENTRES  
 2 SCHOOLS  
 1 RESIDENTIAL BUILDING  
 1 OFFICE




**UNITED KINGDOM**  
 1 SCHOOL  
 1 OFFICE




**ROMANIA**  
 4 RESIDENTIAL BUILDINGS






## Feedback Forums




eTEACHER wants to implement Feedback Forums (FF) in each of the pilot buildings to improve the design and implementation of the tool developed.

Feedback Forums are a group of important building users, representing all types of user, but ultimately those who will be using the end tool. The aim of the FF is to collect honest feedback and opinions relating to the ideas of our project.




## Your voice



Your input, opinions and feedback are vital for the project. We want to ensure that the eTEACHER tool meets your needs, the buildings needs and is something that you will want to use.

Remember there is no right or wrong answers in these meetings – we are really just wanting to hear the honest opinions of building users.




## Today's session

eTEACHER is not only about energy – it is about your comfort too!


Today we would like to collect information about;


- the indoor environment quality
- your views on what the current issues are
- introduce one of our measurement tools to collect information on your comfort.



## Quick ice-breaker

What do you think these buttons mean?






## Pulse system

The buttons belong to the Pulse system, developed by one of our eTEACHER project partners.

System has been designed to collect real-time feedback from building users' on the indoor environmental quality in a building.

Consists of voting buttons and webpage where users' can vote and leave more detailed feedback





eTEACHER

*Are you comfortable?*

*What do you think of when asked about comfort?*

*What might influence your comfort level?*



## Your building

We want you to think about your building now.

- Typically what do you think of the indoor environment?
- Are there any specific factors which affect your comfort in the building?
- Do you (and if so, how) report issues relating to your comfort in the building?






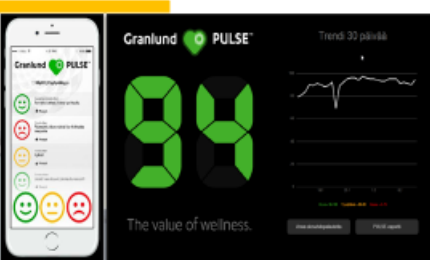
## IEQ Monitoring

eTEACHER will be installing these buttons within your building to collect data on the IEQ satisfaction of building users





## IEQ Monitoring



**This week**  
11/26/2018 – 12/02/2018

27 vibes,  
0 comments,  
0 replies.

14 Good  
13 Bad

**49** Pulse value

The Pulse system produces summaries of the user feedback;

- Overall “building score”
- Split of happy & sad
- Comments left on webpage



## IEQ Monitoring

System includes not only the Happy & Sad face buttons but also a dedicated Webpage.

- Accessible via link or scanning QR code
- Vote and also leave detailed feedback
- Gives more substance
- Report issues and discomfort

Estas de acuerdo con la temperatura en la oficina?






Viimeisimmät kommentit 8

Viimeisin päivästä eteen – 21.01.2019 – Irja  
I am freezing cold!

Viimeisin päivästä eteen – 21.01.2019 – Irja  
I'm cold, very cold!!


Viimeisin päivästä eteen – 18.12.2018 – Irja  
Terrible warm today!




## IEQ Question

We know that asking the right question is important!

1. Are you satisfied with the indoor environmental quality today?
2. How is the temperature of the building?
3. Are you comfortable in the building?
4. Are you satisfied with the air quality in the building?
5. How do you feel in the building today?






## How can we help you use it?

To better understand how we can tailor installing the Pulse system in this building, we need your opinions and feedback!

- Should the questions change throughout?
- Where is the best location for the buttons
- Would you use the website to give detailed feedback?
- Will the QR codes or an email link help?






## Your responses

Thank you for contributing today!

Your feedback will help us tailor the installation of the Pulse system to this building.

It has also let us understand more about the current IEQ in your building and help us identify how eTEACHER could potentially improve this!





## IEQ Monitoring

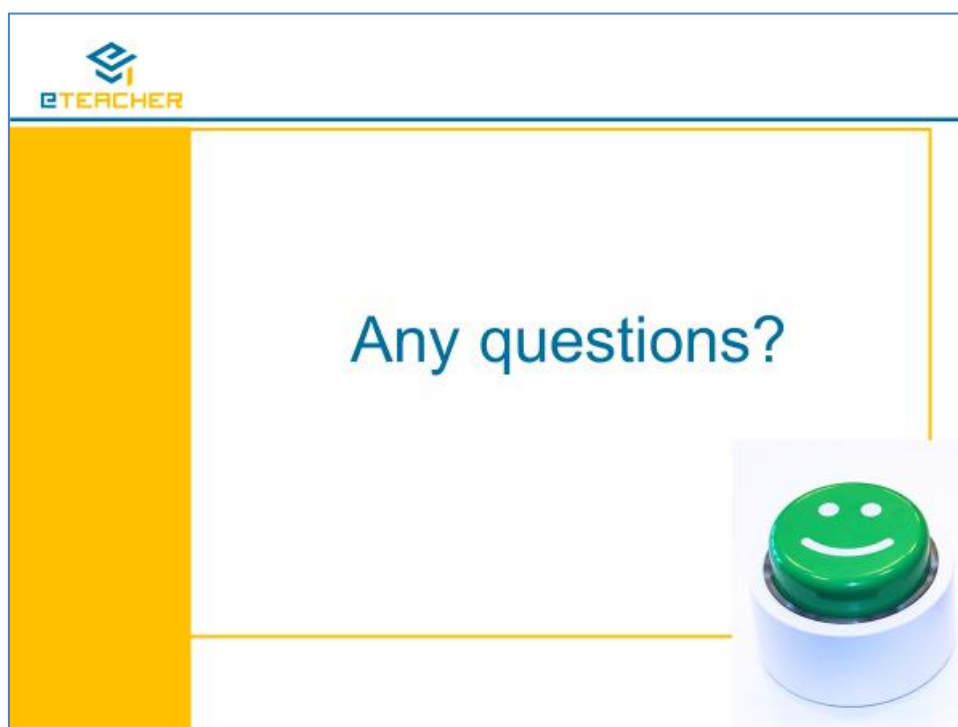
The Pulse system will appear very soon in this building!


Please use these buttons and encourage other building users too!






\*NB: The above slide was to be amended by each pilot building coordinator to reflect the monitoring kit which was being implemented in the specific pilot building\*





## Stay in touch




**Follow us on**

Website – [eteacher-project.eu](http://eteacher-project.eu)

Twitter - [@eteacherEU](https://twitter.com/eteacherEU) #eteacherEU


LinkedIn - [eTEACHER - end-users'tools to empower energy efficiency](https://www.linkedin.com/company/eTEACHER-end-users'tools-to-empower-energy-efficiency)



**Contact us**

[coordinator@eteacher-project.eu](mailto:coordinator@eteacher-project.eu)

[communication@eteacher-project.eu](mailto:communication@eteacher-project.eu)





**eTEACHER**  
Empowering Energy Education

## THANK YOU

End-user Tools to Empower and raise  
Awareness of behavioural **CH**ange  
towards **En**eRgy efficiency

Innovation Action - GA n°768738



### 3.3 Feedback Forum Reporting Template

A report for each Feedback Forum should be prepared by the facilitators and sent to CEM and DMU to ensure that the findings can be collated and disseminated with the relevant project stakeholders. The report should be sent in English with relevant quotes translated.

For consistency reasons results of each Feedback Forum should be reported in the specific format described below.

#### 1. Date/place/time that the Feedback Forum took place and number of participants

Feedback Forum #	1
eTEACHER pilot building	
Country	
Dates	
Number of participants	

#### 2. Short description of arranging Feedback Forum

Briefly describe: How where the participants informed about the feedback forum? Was it difficult for participants to attend the feedback forum? Any other problems with feedback forum?

Comments

#### 3. Executive Summary

Write the main conclusions/recommendations resulting from the feedback forum. Detailed responses for specific topics covered in the Feedback Forum are addressed in Section 4 – this is for the key take home messages.

Comments

#### 4. Summary of each Feedback Forum discussion point (as identified in Facilitators Guide)

Quote the most repeated but also meaningful responses and write a short summary of the discussion made for each of the topics covered in the Feedback Forum.

Give the responses in “quotes” as uttered by the users and in bullets (bullet point list, one bullet per comment). Provide also the number of participants who expressed the same thoughts.

Where you find it necessary you can also quote a response that was an exception to show a different minority opinion or highlight an interesting idea. In this case, you should state that it is the response of only one participant.

Topics: Icebreaker - Pulse



Record notes on discussion points - what do you think these buttons mean from your first impression.

### Topics: Comfort activity

Record notes on each of the discussion points – in particular quotes of interest.

When asked if you are comfortable, what do you typically think of/judge your comfort based on?

What might influence how comfortable you feel?

### Topics: Your building activity



Record notes on each of the discussion points – in particular quotes of interest.

Typically what do you think of the indoor environment in this building?

Are there any specific factors in this building which affect your comfort regularly?

Do you report any issues relating to your comfort in the building?

If so how do you go about reporting issues, who do you contact? Does it typically result in changes being made which improves your comfort?

#### Topics: IEQ Questions

Record notes on discussion points – in particular quotes of interest or alternative suggestions given.

Which question do you think works the best?

Which question do you think is the worst?

Are there any shown that just wouldn't work in this building?

Can you give any examples of alternative question examples that you think would work as a means of collecting feedback on how satisfied users are with the indoor environment in this building?

#### Topics: Pulse support



Record notes on each of the discussion points.

Should we change the question being asked throughout the duration of the project – so it is something new every few weeks?

Where is the best location for the buttons so that you can interact with them easily enough?

Would you use the webpage to leave more detailed feedback?

Will the QR code or email links help you use the feedback system?

### Consolidation and close

Record any notes of questions raised.

### 3.4 Brains Trust and Feedback Forum member's consent form template

## Informed Consent Form (Feedback Forums)

This Informed Consent Form has two parts:

- **Information Sheet** (to share information about the study and the feedback forums with you)
- **Certificate of Consent** (for signatures if you agree)

### Part I: Information sheet

**eTEACHER – End-user Tools to Empower and raise Awareness of behavioural CHange towards EneRgy efficiency**

#### *Information Sheet for Feedback Forum Participants*

#### Introducing the project

eTEACHER is a 3-year project funded by the European Union Horizon 2020 research and innovation programme under grant agreement no. 768738. The project is coordinated by Dr. Noemi JIMENEZ-REDONDO from the Spanish engineering company CEMOSA.

eTEACHER is researching the use of digital technologies in engaging and empowering energy end-users to reduce energy consumption and the environmental impact of buildings. Behaviour change initiatives could have a significant impact on saving energy in buildings. eTEACHER aims to develop an ICT-based tool which can empower energy end-users to save energy, improve the indoor environmental quality and help share knowledge, facilitate collaboration and enable behaviour change.

You are one of the individuals across the council that have agreed to be involved in the project, the success of which depends on forming an initial 'user-group' of a cross section of employees - those with formal responsibilities for energy management and those with none.

#### What will participation entail?

eTEACHER would like to invite you to join the building user feedback forum (see proposed meeting dates below). Experts from the eTEACHER project team will meet with the group to discuss progress of the project but mainly to get feedback on ideas and issues in the development and implementation of the eTEACHER tool within your building. We want to hear your input to help shape a better tool for your building! There will be up to 6 feedback forums held over the next two years of the project, detailed below. It is planned that during these feedback forums the voices of building users can be factored into the design, development and ultimate implementation of the final eTEACHER tool.

	Meeting Date (Exact dates to be confirmed)	Topic
Feedback Forum 1	February 2019 (TBC)	Introduction to the project and the purpose of feedback forums. Introduce Pulse monitoring system and collect views on the indoor environmental quality of the building.
Feedback	May - June 2019	Update on project progress – update on feedback collected via pulse system (specific to each building). Activities based around tool designs





Forum 2	(TBC)	and what information users would find useful and what format they would like it presented in.
Feedback Forum 3	August - September 2019 (TBC)	Feedback on Prototype design and how it fits with your building and other building users. Discussion on app features and use to get users' feedback.
Feedback Forum 4	January - February 2020 (TBC)	Feedback following use of the eTEACHER tool following implementation.
Feedback Forum 5	May 2020 (TBC)	Final evaluation, feedback and recommendations for the eTEACHER tool.

### The purpose of this consent form

To give you a clear explanation of the nature of the research, as well as your role in it as feedback forum participants.

If you agree to participate in the feedback forums, you will be asked to contribute to discussions around the development and implementation of an ICT-based tool within this building. The discussions may take the form of a roundtable discussion, interactive activity or feedback on different design ideas.

Any information you supply will be used exclusively for the purpose of the eTEACHER project and will not be passed to others or used for any other purpose. Information, if published, will be anonymized, so that individuals cannot be identified. Notes from the meetings will be taken. The data collected will be coded using an identification number and, therefore, will be anonymous.

The data will be held securely and disposed of when the purpose of the collection is over.

Participation in the feedback forums is completely voluntary. You are at liberty to withdraw at any time without prejudice or negative consequences.

If you have any questions, you may ask them now or later, even after the study has started. If you wish to ask questions later, you may contact any of the following:

### NAME OF THE PILOT COORDINATOR: ICPE/NCC/AGENEX (*Delete as appropriate*)

- Address: **[to be included]**
- Telephone number: **[to be included]**
- E-mail: **[to be included]**

You can withdraw from the study at any time without it harming you in any way.

Thank you in advance for your participation.



Please bring your completed and signed consent form (Part II, below) to the first meeting.

### Part II: Certificate of Consent

Issue	Respondent's initials
I have read the information about the project, as provided in this form.	
I have had the opportunity to ask any questions related to this study and participation in the feedback forums, and received satisfactory answers to my questions, and any additional details I wanted.	
I am aware that excerpts from the discussions within feedback forums may be included in publications to come from this research. Quotations will be kept anonymous.	
I give permission for feedback forums to be recorded using audio recording equipment, if required.	
I understand that relevant sections of the data collected during the study may be looked at by individuals from the eTEACHER Project, where it is relevant to my taking part in this research. I give permission for these individuals to have access to my responses.	

**With full knowledge of all foregoing, I agree to participate in the eTEACHER feedback forums.**

I agree to being contacted again by the researchers if my responses give rise to interesting findings or cross references.

☐ No

☐ Yes

If yes, my preferred method of being contacted is:

☐ Telephone: .....

☐ Email: .....

Participant Name	
eTEACHER building	
Building user role (e.g. staff, occupant, visitor etc.)	
Date	
Participant Signature	



## 4 Appendix 4 – Feedback Forum 1 Summary Report

### Disclaimer

*The information reflects only the author's view and the Commission is not responsible for any use that may be made of the information it contains.*

### Technical References

Project Acronym	eTEACHER
Project Title	end-user Tools to Empower and raise Awareness of Behavioural Change towards EneRgy efficiency
Project Coordinator	Noemi Jimenez CEMOSA noemi.jimenez@cemosa.es
Project Duration	1 October 2017 – 30 September 2020

### Versions

Version	Person	Partner	Date
1	Ashley Morton	DMU	24 April 2019
1.1	Ashley Morton	DMU	30 April 2019



## 0 Executive Summary

eTEACHER's WP1 seeks to develop and propose effective ideas for a behaviour change intervention, based upon research evidence, consultation with key users of the buildings where eTEACHER will be piloted, and a pre-chosen structured framework for designing behavioural change initiatives, *Enabling Change*. *Enabling Change* is an evidence-based approach for developing and delivering behaviour change interventions, put forward by Les Robinson in the book *Changeology* (Robinson, 2012) and via articles on the Enabling Change website (Robinson, 2018). It advocates a participatory approach to project development, at both whole-programme level and with relation to specific interventions.

A tailored approach to the *Enabling Change* framework was developed for eTEACHER, presented in D1.4 (Reeves, Morton & Bull, 2018). The tailored approach developed in WP1 included the use of "Feedback Forums". For eTEACHER the use of Feedback Forums addresses the need for a project "brains trust" within the Enabling Change framework, here a group of key building stakeholders and actors which could provide feedback on key ideas and concepts for the development of the eTEACHER tool. This report provides a summary of the process of applying the Enabling Change process for eTEACHER with a focus on the outcomes of Feedback Forum 1.

A total of 5 Feedback Forum sessions were held, covering a total of 6 of the eTEACHER pilot buildings in the UK and Romania. Building user feedback data was collected from 29 participants. Feedback Forum 1 was designed to encourage engagement with key building users, ensuring ongoing awareness of the eTEACHER project. Feedback Forum 1 aimed to introduce key building users with the project and get constructive feedback relating to the indoor environmental quality measurements being undertaken as part of the project, in particular introducing the Pulse system. It therefore assessed what users currently thought of the indoor environmental quality, ranging from initial levels of understanding to general satisfaction levels. The Pulse system was introduced to users and feedback gathered relating to its installation, how it should be used and by whom and any potential challenges in each of the respective buildings.

A **keen interest from participants relating to the project** and in particular the opportunity to provide individual feedback relating to the Indoor Environmental Quality was found. Although participants recognised the voting buttons used in the Pulse system, there was a **lack of connection to the buttons being a measure of indoor environmental quality** rather than feedback relating to a service or customer experience. Highlighting **the importance of raising awareness around what the voting buttons and QR codes are being used for**. Encouragement for users to vote both positively and negatively was also found to be a key factor.

There **was a difference in preferences over the best question to be used with the Pulse system**, and this therefore may need further investigation. From the responses collected, **either specific IEQ related questions or one based on comfort** would be best for eTEACHER, however a tailored approach would suit all. **Email reminders with the QR code or website links were seen positively as a way to keep users engaged** with the project and maintain the collection of IEQ feedback data. Weekly reminders were deemed acceptable and the suggestion of Thursday was given as a prime day to encourage participation.

The Feedback Forums were seen as a **benefit for building users giving them the opportunity to ask questions and to gain a better understanding of the project's objectives**.



## 1 Background

eTEACHER's WP1 seeks to develop and propose effective ideas for a behaviour change intervention, based upon research evidence, consultation with key users of the buildings where eTEACHER will be piloted, and a pre-chosen structured framework for designing behavioural change initiatives, *Enabling Change*.

WP1 focussed upon developing an evidence-based approach to intervention design, through engagement with literature on effective behaviour change approaches, engaging with building users and, via dialogue with other project partners, making links to other work packages. A tailored approach to the *Enabling Change* framework was developed for eTEACHER, presented in D1.4 (Reeves, Morton & Bull, 2018).

*Enabling Change* is an evidence-based approach for developing and delivering behaviour change interventions, put forward by Les Robinson in the book *Changeology* (Robinson, 2012) and via articles on the Enabling Change website (Robinson, 2018). It advocates a participatory approach to project development, at both whole-programme level and with relation to specific interventions.

The tailored approach developed in WP1 included the use of "Feedback Forums". For eTEACHER the use of Feedback Forums addresses the need for a project "brains trust" within the Enabling Change framework, here a group of key building stakeholders and actors which could provide feedback on key ideas and concepts for the development of eTEACHER. The use of Feedback Forums has been recommended throughout both Year 2 and Year 3 of the eTEACHER project as a means to encourage and enhance user engagement with the project and the resulting ICT based tool.

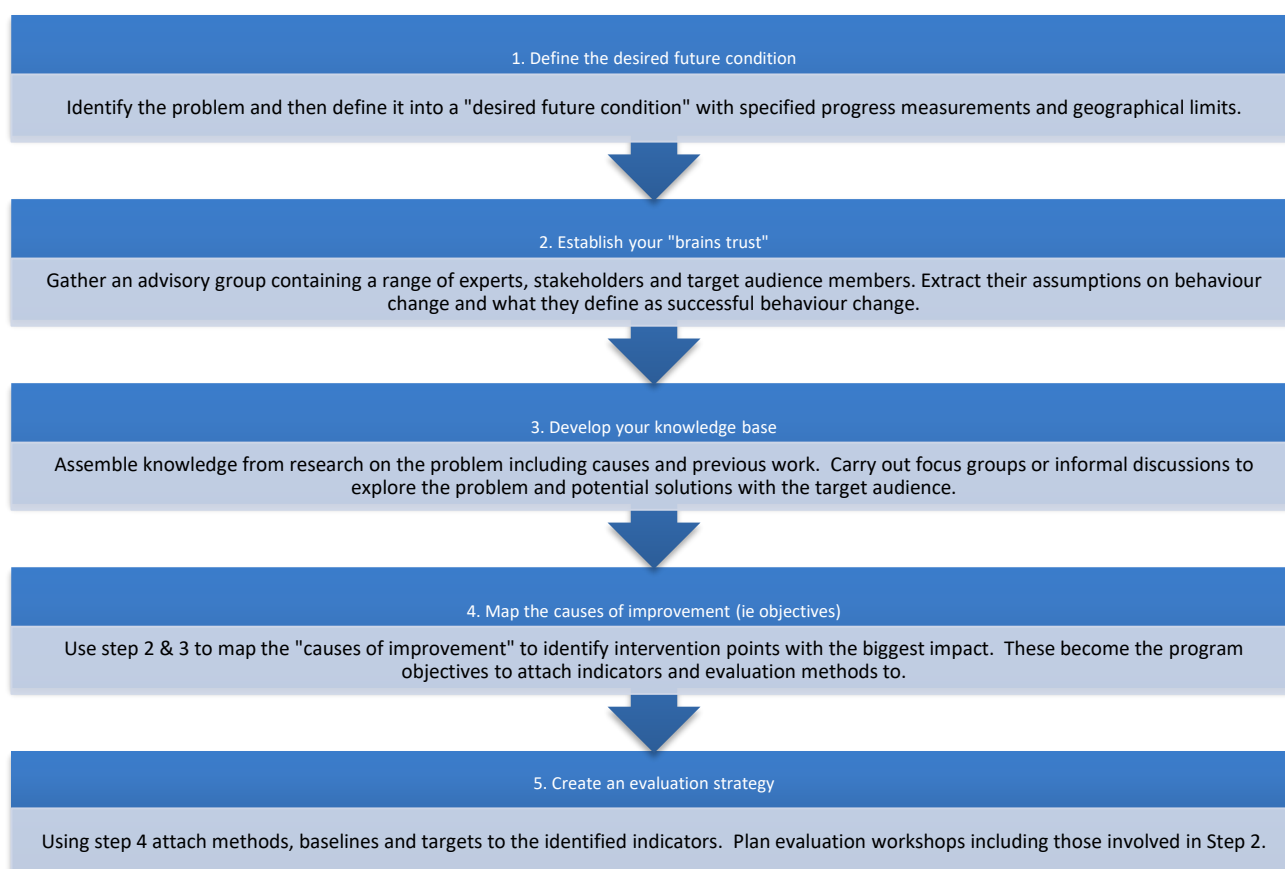
This report reiterates the suggested actions, tasks and responsibilities relating to applying the Enabling Change process throughout Years 2 & 3 of eTEACHER. However, the main purpose of this document is to provide a summary of the outcomes of Feedback Forum 1. The report therefore consists of a background section highlighting key elements of the Enabling Change process and the suggested timescales for actions and tasks; an explanation of the aims and objectives of Feedback Forum 1; the key findings from Feedback Forum 1; a section on the main conclusions gained and appendices containing many of the supporting documents produced for Feedback Forum 1.

## 2 Background to the Feedback Forums: the Enabling Change process

This section highlights the key principles for the design of behaviour change interventions using Les Robinson's (2011) "Enabling Change" framework, as introduced in D1.1 (Morton, Reeves & Bull, 2018), and applied to the eTEACHER project in D1.4 (Reeves, Morton & Bull, 2018). It reiterates the suggested actions, tasks and responsibilities relating to applying the Enabling Change process throughout Years 2 & 3 of eTEACHER. However, the main purpose of this document is to provide details of the first Feedback Forum and summarise the key findings.

### 2.1 Enabling Change: Overview

The 'Enabling Change' approach (Robinson, 2011) is a practitioner-oriented overview of principles for designing effective behavioural interventions. It has two different levels of planning: programme level (Figure 1) and project level (Figure 2). The *programme level* process defines the medium/long term objectives for the behaviour change intervention, in this case for eTEACHER as a whole, whereas the *project level* plan deals with the practicalities of engaging with end-users around specific behaviours, in this case for implementing eTEACHER at pilot sites.

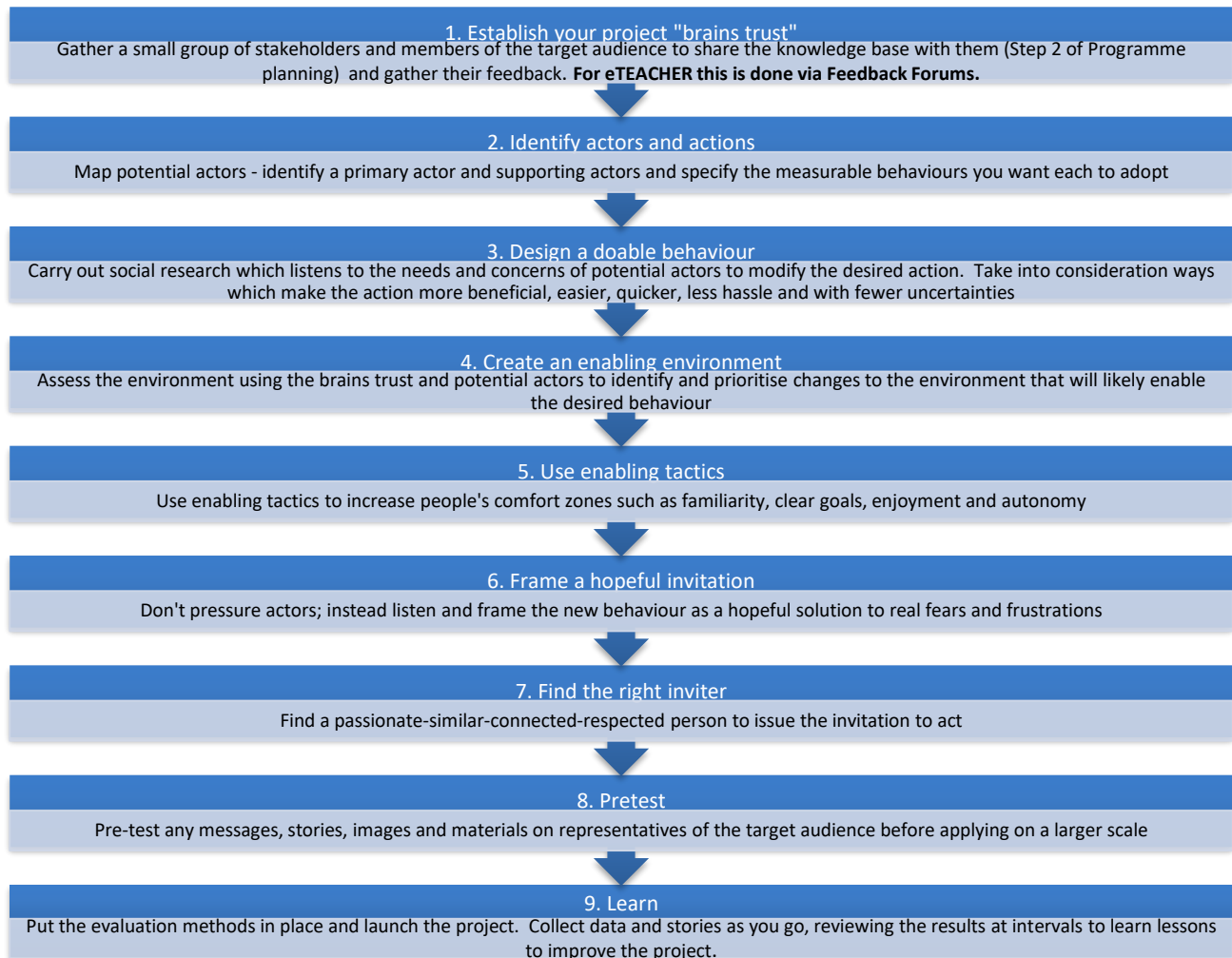


**Figure 3 The Enabling Change process at Programme level**

At Programme level, eTEACHER has put the general Enabling Change principles into practice via Work Package 1 during the first year of the project. Initial user engagement and desk-based research has been used to implement steps 2 to 4. This has created a platform for continued user engagement in years 2 and 3 (step

2) as specified in D1.4 (Reeves, Morton & Bull, 2018), and has informed eTEACHER's evaluation strategy, as described in D4.1 (Peralta et al, 2018).

The project level principles of employing Enabling Change are shown in Figure 2.



**Figure 4 The Enabling Change process as applied at Project level**

Many of the Enabling Change steps presented at project level can be supported from gaining building user feedback through the use of Feedback Forums. For eTEACHER the use of Feedback Forums addresses the need for a project “brains trust”, a group of key building stakeholders and actors which could provide feedback on key ideas and concepts for the development of eTEACHER.

## 2.2 Applying Enabling Change to eTEACHER

Drawing upon Robinson's Enabling Change framework (Robinson, 2011) for project-level design, four recommended actions and associated tasks for eTEACHER implementation were put forward in D1.4 (Reeves,

Morton & Bull, 2018), linked to each of the nine project planning principles within *Enabling Change*, these are summarised in Table 1.

**Table 5 Actions, Tasks and Responsibilities**

Recommend Action	Tasks for Partners	Enabling Change Principles	Responsible Partners
<b>A: Identify stakeholders and their role in engaging with eTEACHER</b>	(i) Identify and maintain a list of users (both general roles and specific individuals) and their potential involvement in developing eTEACHER. (ii) Identify potential “Right Inviters” – users who can engage others in using eTEACHER. (iii) Establish a feedback forum for each pilot site, which is engaged with at least monthly in relation to the tasks below. This engagement should constitute at least three face-to-face group meetings per year and complementary informal feedback as required (e.g. via email or phone).	1. Establish your project brains trust ( <i>Feedback Forum members</i> ) 2. Identify Actors and Actions 7. Find the Right Inviter	<b>AGE, ICPE, NCC</b> for each respective pilot site  <b>DMU</b> to provide mentoring support
<b>B: Embed user feedback and behaviour change theory into eTEACHER development process.</b>	(i): Use behaviour change theory (i.e. COM-B, Robinson’s principles for Enabling Change and recommended Behaviour Change Techniques) to inform eTEACHER design (ii): Develop a pretesting plan, specifying when and how users offer feedback (iii) Develop questions and pre-test materials for users to engage with (iv) Consult with users at pilot sites using pre-test materials	3. Design a doable behaviour. 4. Create an enabling environment. 5. Use Enabling Tactics. 8. Pre-test.	(i), (ii) and (iii): <b>ASC</b> for WP3; <b>GRA</b> for WP2 (iv): <b>AGE, ICPE, NCC</b> for each respective pilot site  <b>DMU</b> to provide mentoring support
<b>C: Secure participation of target users</b>	(i) Develop engagement plan to secure participation by target users, using Enabling Change principles (ii) Develop materials/messages to engage users (iii) Consult with users at each pilot site to pre-test messages	6. Frame a hopeful intervention. 7. Find the right inviter.	(i), (ii): <b>ICE</b> (iii): <b>AGE, ICPE, NCC</b> for each respective pilot site  <b>DMU</b> to provide mentoring support
<b>D: Embed user feedback into evaluation process</b>	(i) Develop plan to pre-test user feedback into evaluation design (year 2) and to elicit feedback to enhance implementation (year 3) (ii) Develop materials to elicit feedback (iii) Consult with users at each pilot site	9. Learn	(i), (ii): <b>CEM</b> (iii): <b>AGE, ICPE, NCC</b> for each respective pilot site  <b>DMU</b> to provide mentoring support

The framework can be understood in terms of its alignment to three key aspects of eTEACHER:

- **Development**
  - Via eTEACHER work packages 2 and 3, with support from work packages 1 and 7
  - Enabling Change Recommended Actions A and B
- **Implementation and Evaluation**
  - Via eTEACHER work package 4
  - Enabling Change Recommended Actions C and D
- **Exploitation, Dissemination and Communication**
  - Via eTEACHER work packages 5 and 6
  - Enabling Change Recommended Action C

The initial timetable for developing the recommended actions with suggested dates from D1.4 was updated following feedback from project partners, Table 2 below. This feedback allowed for the timescales to be



altered but also developed linkages with relevant work packages and project partners to identify where feedback from building users could benefit the development and implementation of the final eTEACHER tool.

**Table 6 Revised Stakeholder Engagement via Feedback Forums**

Feedback Forum	Description	Materials provided	Suggested timescale	Responsibility and actions
Planning phase - Ai: Identify list of users and potential involvement in developing eTEACHER	Pilot site co-ordinators combine a list of existing contacts with further outreach (e.g. via email, posters, word of mouth) to develop a list of contacts who are interested in offering feedback to develop eTEACHER	Appendix B in D1.4	January 2019	NCC, AGE, ICPE
Planning phase - Ai: Maintain list of users and potential involvement in developing eTEACHER	Pilot site co-ordinators maintain (and add to, as needed) a list of contacts who are interested in offering feedback to develop eTEACHER	Appendix B in D1.4	Throughout Year 2 & Year 3	NCC, AGE, ICPE
Feedback Forum 1	<p>An initial Feedback Forum meeting including:</p> <ul style="list-style-type: none"> <li>• Introductions and introduction to the role of the Feedback Forum</li> <li>• Summary of the aims and approach of eTEACHER – framed around the benefits to users</li> <li>• WP2 activity – introduction to the feedback pulse system</li> <li>• Discussion based on what sort of messages would users respond to regarding the feedback system. What are they likely to feedback on? Use of buttons versus web page. Discussion around how to engage users within the building to give feedback via the system. Best location so users interact with system.</li> <li>• Discussion on identifying potential “right inviters”</li> </ul> <p>It is expected that this FF will be more like a focus group format with facilitation of active discussion between those attending.</p>	<p>DMU will provide slides, facilitators guide and any materials relevant to activities being carried out during session.</p> <p><b>WP2 to provide inputs to DMU to create these materials – see responsibility and actions column.</b></p>	January – February 2019	<p><b>NCC, AGE, ICPE</b> – Set up and carry out FF meeting</p> <p><b>WP2 (GRA)</b> – Provide visual aids to DMU to use in presentation slides such as photos or images of the pulse system and webpage.</p> <p>Provide DMU with list of example messages which discussions could be structured around – currently what questions are asked and about what (temperature, humidity etc.).</p> <p><b>DMU</b> – Put together slides, facilitators guide and handouts (if needed) and send to pilot coordinators. Hold an online meeting running through FF content and materials to answer any questions or make any suggested edits (WP2, NCC, ICPE &amp; AGE to attend).</p>
Feedback Forum 2	<p>Feedback Forum meeting</p> <ul style="list-style-type: none"> <li>• Quick intro to Feedback Forum concept and benefits to the project</li> <li>• Update on project progress – update on feedback collected via pulse system (specific to each building)</li> <li>• WP3 activity – activities based around what types of hints the users would find useful. What format they would like information to be presented in. Aesthetics of the design of the app. What sort of missions they would happily get involved with. Which visualisations would be favoured?</li> </ul>	<p>DMU will provide slides, facilitators guide and any materials relevant to activities being carried out during session.</p> <p><b>WP2, WP3 &amp; WP4 to provide inputs to DMU to create these materials – see responsibility and actions column.</b></p>	May – June 2019	<p><b>NCC, AGE, ICPE</b> – Set up and carry out FF meeting</p> <p><b>WP3 (ASC)</b> – Provide visual aids for DMU to use in presentation slides such as images or mock-ups of the app interface and screenshots</p> <p>Provide DMU with list of hints that you would like tested/prioritised by building users.</p> <p><b>WP2/WP4</b> – Provide summary of level of feedback being received from each building relating to the use of the pulse system</p>

				<p><b>DMU</b> – Put together slides, facilitators guide and handouts (if needed) and send to pilot coordinators. Hold an online meeting running through FF content and materials to answer any questions or make any suggested edits (WP3, NCC, ICPE &amp; AGE to attend).</p>
Feedback Forum 3	<p>Feedback Forum meeting</p> <ul style="list-style-type: none"> <li>• Focus on feedback to aid initial tool design – pre-test messages</li> <li>• Discussion based on app features and use – users feedback on initial thoughts and expected use of the app</li> <li>• Discussion based on roll-out – particularly if materials are to be used (what do users want to know about, what format are they most likely to take notice of etc.)</li> <li>• Discussion on identifying potential “right inviters”</li> </ul> <p>• Reminder on WP2 pulse feedback buttons</p> <p>It is expected that this FF will be a mix between focus group discussion between those attending and hands-on activities similar to the format delivered in WSA with handouts and stickers to prioritise features.</p>	<p>DMU will provide slides, facilitators guide and any materials relevant to activities being carried out during session.</p> <p><b>WP2, WP3, WP4 &amp; WP6 to provide inputs to DMU to create these materials – see responsibility and actions column.</b></p>	August – September 2019	<p><b>NCC, AGE, ICPE</b> – Set up and carry out FF meeting</p> <p><b>WP2/WP4</b> – Provide update on pulse feedback system use and if any additional information is needed from building users.</p> <p><b>WP3 (ASC)</b> – Provide DMU with visual aids of app and list of features on app. Any example mock-ups of app which can be shown to building users</p> <p><b>WP6</b> – Provide any materials which are being used for the rollout of the final tool (<b>if applicable</b>)</p> <p><b>DMU</b> – Put together slides, facilitators guide and handouts (if needed) and send to pilot coordinators. Hold an online meeting running through FF content and materials to answer any questions or make any suggested edits (NCC, ICPE &amp; AGE to attend).</p>
Feedback Forum 4	<p>Feedback Forum meeting</p> <ul style="list-style-type: none"> <li>• Discussion on use to date of eTEACHER, observed use by others in their building and any changes in energy-related behaviour</li> <li>• Evaluative feedback on eTEACHER’s effectiveness, including strengths and potential improvements</li> <li>• Collaboratively analyse the factors influencing engagement with eTEACHER and its effectiveness in influencing changes in energy-related behaviour</li> <li>• Interactive activity by users on use of features in app and awareness of hints/missions being used within app (discussion shall be encouraged during activities as to the reasons behind why functions/hints/missions not used by users and what elements users like, dislike, have potentially disengaged from)</li> </ul>	<p>DMU will provide slides, facilitators guide and any materials relevant to activities being carried out during session.</p> <p><b>WP4 to provide inputs to DMU to create these materials – see responsibility and actions column.</b></p>	January – February 2020	<p><b>NCC, AGE, ICPE</b> – Set up and carry out FF meeting</p> <p><b>WP4</b> – Provide update on use of tool in each of the pilot buildings, including any visual prompts which can be used in the presentation to enhance interest (data traces etc.). Provide list of any particular elements of use that would benefit from evaluation during the FF.</p> <p><b>DMU</b> – Put together slides, facilitators guide and handouts (if needed) and send to pilot coordinators. Hold an online meeting running through FF content and materials to answer any questions or make any suggested edits (NCC, ICPE &amp; AGE to attend).</p>

	It is expected that this FF will be more like a focus group format with facilitation of active discussion between those attending.			
Feedback Forum 5	<p>Feedback Forum meeting</p> <p>Discussion during session on the following points;</p> <ul style="list-style-type: none"> <li>• Qualitatively describe their use to date of eTEACHER, observed use by others in their building and any changes in energy-related behaviour</li> <li>• Share evaluative feedback on eTEACHER's effectiveness, including strengths and potential improvements</li> <li>• Collaboratively analyse the factors influencing engagement with eTEACHER and its effectiveness in influencing changes in energy-related behaviour</li> </ul> <p>It is expected that this FF will be more like a focus group format with facilitation of active discussion between those attending.</p>	<p>DMU will provide slides, facilitators guide and any materials relevant to activities being carried out during session.</p> <p><b>WP4 to provide inputs to DMU to create these materials – see responsibility and actions column.</b></p>	May 2020	<p><b>NCC, AGE, ICPE</b> – Set up and carry out FF meeting</p> <p><b>WP4</b> – Provide update on use of tool in each of the pilot buildings, including any visual prompts (data traces etc.) which could be of interest to those attending. Provide list of any particular elements of use that would benefit from evaluation during the FF.</p> <p><b>DMU</b> – Put together slides, facilitators guide and handouts (if needed) and send to pilot coordinators. Hold an online meeting running through FF content and materials to answer any questions or make any suggested edits (NCC, ICPE &amp; AGE to attend).</p>

### 3 Feedback Forum One

#### 3.1 Aim for Feedback Forum One

Feedback Forum 1 was designed to encourage engagement with key building users throughout the development stage of the eTEACHER ICT tool. As shown in Table 2, the first Feedback Forum aimed to introduce or re-familiarise those key building users with the project and get constructive feedback relating to the indoor environmental quality measurements being undertaken as part of the project, in particular introducing the Pulse system. Feedback Forum 1 would assess what users currently think of the indoor environmental quality, ranging from their initial level of understanding to their general satisfaction regarding it. Then the monitoring system being used, the Pulse system, was introduced to users and feedback was gathered relating to the installation of such monitoring system, how it should be used and by whom in the building, and on potential challenges of such a system being used in each eTEACHER pilot building. Given the content being covered during this Feedback Forum the format was kept similar to that of a focus group, where the facilitator guided participants through active discussions on particular points of interest.

#### 3.2 Supporting materials

All pilot building coordinators were provided with materials for delivering each of the Feedback Forums as well as an online training session organised by DMU to go through the content of the Feedback Forum and materials being provided. The materials were designed to ensure consistency was achieved across all pilot building feedback forums. The supporting materials include;

7. **Feedback Forum Facilitators Guide (Appendix 6.1):** This document shows the suggested format of the Feedback Forum meetings including a welcome and general housekeeping items, an ice-breaker, an introduction to the session, the relevant topic sections (including questions, prompts and activity details) and a wrap up section. The guide also allows for detailed instructions to be given to facilitators relating to when materials are distributed and what information is deemed of importance and therefore highlights to facilitators what should be recorded/noted during the session.
8. **Feedback Forum Presentation (Appendix 6.2):** This presentation utilised the standard eTEACHER presentation slides however it was simplified for the building user audience and the relevant information relating to Feedback Forum has been added.
9. **Feedback Forum Reporting Template (Appendix 6.3):** This template could be used by the pilot building coordinators to report back the findings of each Feedback Forum. This information will then be used to evaluate the Enabling Change process and/or aid the development and implementation of the eTEACHER tool in the associated building.
10. **Consent form for Feedback Forums (Appendix 6.4):** This template expands on the eTEACHER consent form to be focused particularly on the Feedback Forums. Therefore, it details an overview of the project, the multiple purposed feedback forums, the data which will be collected and the participant's anonymity. It is important that we get the participants consent so that we can utilise the rich data gained from holding these Feedback Forums in each pilot building.



### 3.3 Feedback Forum 1 in eTEACHER buildings

Due to organisational issues, the first Feedback Forum was only completed within the UK and Romanian pilot buildings, covering a total of 6 eTEACHER buildings including residential buildings, a school and an office building. A summary of the Feedback Forums held can be found in Table 3 below.

**Table 7 Summary of Feedback Forum 1 participation**

Country	eTEACHER pilot building	Building type	Date of FF1	Participants
United Kingdom	Council House	Office	5 <sup>th</sup> March 2019	7 staff
United Kingdom	Djanogly	School	8 <sup>th</sup> March 2019	6 staff
Romania	InCity	Residential	3 <sup>rd</sup> March 2019	5 staff
			19 <sup>th</sup> March 2019	5 residents, 2 visitors
			5 <sup>th</sup> April 2019	6 residents (only 4 consented to involvement in FF)

In total 31 people participated across a total of 5 FF1 sessions, however data was only gathered from 29 participants that consented to their feedback being collected as data.

### 3.4 Key Data Collection areas

As previously mentioned, the main focus for this Feedback Forum was on Indoor Environmental Quality monitoring and eTEACHER's aim of improving the indoor environment via the final eTEACHER tool. As such, key themes were identified in which data should be collected from building users, relating to the specific areas.

The 5 main themes for data collection were;

1. Icebreaker – initial thoughts and impressions of Pulse system buttons
2. Building users' comfort
3. Specific IEQ/comfort issues relevant to the pilot building
4. Pulse system support
5. Any concerns, challenges or questions raised.

In addition to this, each of the pilot coordinators was asked to report on the logistics and organisation required for facilitating these Feedback Forums, as a means to improve, support and further mentor project partners.



## 4 Feedback Forum 1 Findings

### 4.1 Initial perceptions of Pulse monitoring system

As part of an ice breaker exercise for the Feedback Forum the participants were presented with an image of the Pulse system voting buttons and asked to say what their initial perception was of the buttons, what did they understand them to mean, what did they associate the use of them with. Across the three different building types, the majority of participants reported how they associated them with similar buttons used in shopping centres, gyms, service stations and toilets – normally asking for feedback relating to how they felt their service had been or the facility was (cleanliness etc.).

It was not clear to participants that the buttons were being used in relation to comfort and some even referred to them as looking like they might be part of a school experiment. Therefore, participants stated that additional further information would be required next to the buttons explaining what they were being used for. In all of the buildings there was some level of hesitation as to misuse of the buttons, children excited to play with them, visitors to the building misunderstanding their use and voting on how they feel or in relation to a service, students interfering with the buttons if easily accessible.

### 4.2 Building users' comfort

Across the feedback forums participants responses to what they consider when reflecting on whether they are comfortable or not varied. In general participants reported that many factors can influence their perception of comfort including, work stresses, health, personal mood, ambiance, building related aspects, being able to continue working without distraction, breathing ability. Therefore questions relating specifically to the temperature in buildings may not give a true representation of the comfort level within that building. However, many factors that building users associate with influencing their comfort level are not possible to monitor in the eTEACHER project. Therefore this should be taken into consideration in the final evaluation of the tool.

There was a mutual agreement that typically they are only really conscious of comfort when something is making them uncomfortable.

“You are a bit oblivious when you’re comfortable” [Office, UK]

“If you are comfortable then you just get on with it” [Office, UK]

Those within a work environment also indicated that they are likely to be more susceptible to uncomfortable conditions as their expectation of comfort at home is different to that at work, “You’re not going to find a sofa to relax on at work” [School, UK]. Those within a work environment stated that they class comfort as being able to get on with their job without being distracted by being cold, or distracted by noise, smells or excessive light. Similarly those within the residential buildings indicated that noise, sight and colours, natural light, ventilation, cleaning, smells, neighbours, stress and temperature all contribute towards individuals comfort.

There were reports of differing levels of comfort expectations within the work environments as many participants reported that it is extremely difficult to please all people at the same time, particularly in open

plan or shared spaces. A factor which could have a big impact on the results for the Pulse system, depending on who is likely to vote on their comfort.

### 4.3 Specific IEQ and comfort issues for each pilot building

Factors relating specifically to each building can have an influence on the comfort levels experienced within a building. Being able to open and shut windows was mentioned by a number of participants. Within the school building it was reported that on one side of the building windows cannot be opened which causes discomfort in summer and can impact the breathing ability of occupants due to rooms being too stuffy and hot.

“32 teenagers in one room at 2pm on a hot sunny day on the south side of this building....let’s say it is not pleasant conditions!” [School, UK]

Similarly, in the office building one participant reported being unable to open their windows due to pigeon excrement on the windowsill outside, even noting that the seals are so poor on the windows that some of it can get blown in when it is windy without opening the window. This shows the importance of understanding the location of the eTEACHER tool users as they may be restricted in altering the environment to improve the IEQ within a specific area.

In general residential building users were satisfied with the current IEQ within their buildings, however if unsatisfied they have access to two building administrators who can address any issues. In the school building there was numerous participants who reported temperatures, smells and noise as being an issue on their comfort. The teaching environment had been improved recently, however it has caused some comfort issues for certain members of staff as they now only have access to standing desks and on long days this can become very uncomfortable for them. Within the office building it was reported that the windows typically cause the most issues for comfort with building users but that it can be very “hit or miss” in the building with some areas being uncomfortable and others being fine. However, in both the school and office building participants did mention that they do report issues of discomfort with FM or management.

During the Feedback Forums, examples of possible questions which could be used to gain feedback from building users were presented. The 5 options were;

1. Are you satisfied with the indoor environmental quality today?
2. How is the temperature of the building?
3. Are you comfortable in the building?
4. Are you satisfied with the air quality in the building?
5. How do you feel in the building today?

The responses from the feedback forums indicated conflicting results based on the location of the pilot buildings. In Romania the preferred question was “How do you feel in the building today?” as it is an open question which stimulated many responses and reactions, which was seen as a way to improve awareness of individuals perception of what comfort means to them. However, in UK pilot buildings there was a preference for questions which were more specific as then it is clear as to what exactly they are being asked to vote on, although there was still differing opinion across the two UK pilot buildings. The 1<sup>st</sup>, 3<sup>rd</sup> and 4<sup>th</sup> questions were





identified as being ideal if you wanted a yes or no answer, with no incentive to give further explanation impacting on the potential use of the online feedback site. Whereas, the 2<sup>nd</sup> and 5<sup>th</sup> question invites further comments in addition to a yes or no response. Overall the last option was deemed to be the worst in both UK pilot buildings as it was far too vague and it opens up the vote to too many variables, some of which may be nothing to do with building or an individual's personal comfort. Within the office building it was felt that "environmental" could be confusing in the first question as it was deemed too vague in what it was actually referring to. The participants also thought that the 4<sup>th</sup> question was not really a question people typically get asked and therefore could be confusing. This highlights that some elements which are factors of the Indoor Environmental Quality, such as air quality, could be confusing to some building users impacting the possible options for IEQ specific questions which could be used.

These results shows the complexity in choosing a question which works in each pilot building, particularly for those buildings where the translation may not reflect the same meaning. As such, and given the lack of Spanish pilot building opinion, it would be beneficial to experiment further with how users may respond to different questions. As it stands currently, given the preference in both the office and school buildings, it can be recommended that a question asking about users' comfort in a building would be best suited. In an ideal situation the question would be tailored to each buildings preference, however a consistent approach is needed in eTEACHER if the tool is to be applicable to various different building and user types.

## 4.4 Pulse system support

The location of the physical buttons is a key consideration to ensure that building users can interact and use the buttons in an easy, accessible and convenient way.

"If placed somewhere silly, expect a silly result" [School, UK]

Within the residential buildings two preferences for the location of the physical buttons were reported, one being between the elevator entrances on the ground floor of each building and the second being within the administration office (for all four of the InCity buildings) as long as they were accompanied with proper flyers dedicated to each buildings. Unfortunately, the second option given is likely to cause confusion as to which buttons relate to which building and is likely to take up valuable space in the administration office as this would mean a total of 8 buttons being in one spot. Within the school the preferred location would be one where the students cannot access them without being supervised, but also somewhere that does not become a distraction to students. Within the office building there was a preference that the buttons are kept away from members of the public, as it was deemed that they would not understand what the buttons related to, again coming back to the perception they may be an indication of service quality. They also suggested that the buttons are not located in the main entrance foyer, one due to the presence of members of the public but two due to the fact that area of the building is always extremely cold and therefore would result in a lot of negative votes.

One of the key aspects for enhancing user engagement and encouraging users to regularly feedback regarding the IEQ in each pilot building is through ensuring building users are engaged and actively participating. A method to ensure users are continuously engaged would be to regularly change the question





being asked relating to the voting buttons. In both the school and the office building this was a keen option with suggestions of both weekly and fortnightly questions focusing on different aspects of comfort, e.g. temperature, lighting, etc. Interestingly, the residential building participants reported that they would not like the question to change throughout the duration of the project and in fact would much rather prefer that it is kept to the same throughout the duration of the project. This is unusual and goes against the findings reported within the UK pilot buildings. However, residential buildings are used differently to non-domestic buildings such as schools and offices, in particular residents are only spending a short amount of their time in the communal areas of the apartment buildings and the majority of their time will be spent in their own individual apartment, where they have their own control over the indoor environmental quality (to a certain extent). Therefore, this could be one of the reasons behind their preference for the question remaining the same throughout the monitoring period.

The residential building users were also apprehensive regarding their likelihood of using the Pulse webpage to leave more detailed feedback regarding their IEQ experience, with only 30% indicating that they would definitely give more detailed feedback, with a further 30% stated they definitely would not leave detailed feedback. Although there was not a high level of enthusiasm for leaving detailed feedback via the Pulse webpage, 88% of residential building users indicated that they believe the QR codes and email links will help encourage them to vote via the online system. Within the school there was suggestions surrounding the use of the buttons, in a controlled manner, with students as a means to get their feedback. However, given the restriction on smart phone use for students, the buttons were deemed to be the best option for the students to still be involved in giving feedback for the project. Within the office building there was agreement that the majority of the participants would be more likely to use the buttons however there was interest from those working in areas of the building not being monitored to participate and an email link was preferred. However, it was stated that any email reminder needed to be made easy and fail safe, so that once the link was clicked that it took them straight to the page where they could vote/add comments.

In both the school and the office building there was keen interest in having an email reminder on the feedback system as “people won’t scroll through their emails to find it” [Office, UK], so a regular email with feedback and the link would improve engagement. There was a desire from participants that there was also transparency over what the data was being collected for and what was being done with it, as without this there could be the risk of a drop off in votes is people think nothing is being done from their votes of discomfort. A weekly email reminder was deemed to be acceptable by participants of the UK feedback forums, with the suggestion of a Thursday afternoon as being a prime time period to send the reminder.

“If you ask people to vote first thing on a Monday then everyone will vote negative” [School, UK]

There was also the suggestion that should feedback drop off then a reminder could be sent which states how long it has been since people votes, “you haven’t left any feedback on the environment in the last 3 weeks, how are you feeling today...this week’s IEQ question is...” [Office, UK]



## 4.5 Building users' concerns, potential challenges and questions raised

InCity participants raised questions relating to when the physical buttons for the Pulse system would be placed within the buildings, and in what location would they be found in. Similarly concerns were raised in both the school and office building relating to who could access the buttons. In the office building there was a preference that only staff give feedback on the IEQ for various reasons. One being that staff spend all day in the building compared to members of the public who may only spend 10-30 minutes in the building, and this difference could skew the votes. There was also apprehension raised around how appropriate it would be to ask people who pay to use the building to vote, given the multiple events which are held within the Council House.

In general the residential participants indicated there was eagerness to try both the physical and online IEQ feedback tools, indicating that a good response rate may be possible within the residential properties should the buttons be installed shortly following the Feedback Forum and that building users are alerted to where they can vote (both using the physical buttons and via the online QR code access). However there were some indications that building users could be put off using the buttons if they deemed their feedback to be useless, i.e. if nothing happened as a result of them providing feedback. Given the Pulse system is being used pre and post installation of the eTEACHER tool it might be beneficial if future Feedback Forums also provide an update on the feedback collected via Pulse, that way building users can see their feedback is being used particularly ahead of the tool being implemented.

Participants did suggest that the feedback given may lean heavily on the negative side compared to the positive side as in both the school and office buildings there was agreement from participants that they would most likely use the system when uncomfortable. Therefore, it is key that building users are encouraged to vote regularly and both when comfortable and uncomfortable. This could mean using future Feedback Forums as a method to emphasise the importance of voting both when satisfied and when unsatisfied.

## 4.6 Feedback Forum Logistics and Organisation

As part of the data collection, pilot coordinators were asked to provide feedback relating to the organisational aspects of arranging and facilitating the Feedback Forums in each building.

Within the Council House the process for organisation went smoothly with service managers being very helpful and gathered an eclectic group of staff. Unfortunately the group ended up smaller than anticipated due to illness and staff shortages, however the discussion that did result were constructive and there was an encouraging atmosphere in the group which bodes well for future feedback forums in the building.

Within the UK school building there was some initial hesitation and resistance to setting up the Feedback Forum due to the belief that not much had changed for users since the last engagement activity. Once the objectives were explained the school became more open to cooperation. The contact within the school recruited participants for the session and managed to recruit a diverse sample of staff, not just teaching members of staff. Following the session the senior member of staff who arranged the session flagged up that



he may avoid future sessions so that staff feel more open to speak freely and not feel pressurised by a senior member of staff being present.

The residential buildings had the most difficulty in organisation of the Feedback Forum given people's availability so it was decided to arrange three separate feedback forum sessions, one with staff, and two with residents and visitors. It was noted that it was not easy for many to participate particularly due to a lack of space for presentations to be given. The administration office was used this time however it is very small and not enough space for larger groups or for activities to be carried out. This needs to be taken into consideration with future feedback forums that either a smaller group will participate in a different location or the format of the feedback forums may need to be altered for the Romanian residential properties.



## 5 Main Conclusions

Overall in the residential buildings, the school and the office building in which the Feedback Forum 1 were held, there was a **keen interest from participants relating to the project** and in particular the opportunity to provide individual feedback relating to the Indoor Environmental Quality. There was recognition across all buildings relating to the voting buttons, however a **lack of connection between the buttons being a measure of indoor environmental quality** rather than feedback relating to a service or customer experience. This highlights **the importance of raising awareness around what the voting buttons and QR codes are being used for**. Without this information, many participants indicated that people may still use the buttons but not necessarily relate them to IEQ but rather mood or interactions with others. Similarly many participants reported an increased likelihood of voting negatively and how many are not bothered to give feedback when they are happy or satisfied with the IEQ, but will actively complain/give feedback when uncomfortable. Therefore it is **important that building users are made aware that we need both (positive and negative votes)** to fully understand what conditions (through our monitoring data) are deemed satisfactory by building users if we are to enhance users IEQ satisfaction levels.

Many of the participants also asked general questions relating to the project, aside from the topics covered by Feedback Forum 1, therefore **showing the benefit for building users to have an opportunity to ask questions and to gain a better understanding of the project's objectives in these Feedback Forum sessions**.

In general participants reported that they were more likely to use the buttons primarily however participants liked the idea and having the additional option to vote online. **Email reminders with the QR code or website links were seen positively as a way to keep users engaged** with the project and maintain the collection of IEQ feedback data. The online voting option also allows those building users who may not be in close proximity to the voting buttons to participate. Weekly reminders were deemed acceptable and the suggestion of Thursday was given as a prime day to encourage participation.

There **was a difference in preferences over the best question to be used with the Pulse system**. In general comfort was seen as a subjective term and therefore specific questions were preferred within the UK pilots, however there was agreement that if a broad question was to be selected then the question relating to comfort was best. However, within the residential buildings the preference was for the question which asked people how they felt. This is likely to be even more subjective and certainly the UK pilots reported that people may connect how they feel with their general mood, what is happening that day etc. and not necessarily to their comfort. Therefore, **for eTEACHER either specific IEQ related questions or one based on comfort** would be best.



## 6 References

Morton, A., Reeves, A. and Bull, R. (2018). Key Concepts Summary. Deliverable 1.1 of the eTEACHER project funded under the European Union's Horizon 2020 research and innovation programme GA No: 768738. Brussels: eTEACHER consortium.

Peralta, J. J., et al. (2018). Evaluation Methodology and preliminary pilots' descriptions. Deliverable 4.1 of the eTEACHER project funded under the European Union's Horizon 2020 research and innovation programme GA No: 768738. Brussels: eTEACHER consortium.

Reeves, A., Morton, A. and Bull, R. (2018). Applying "Enabling Change" to eTEACHER. Deliverable 1.4 of the eTEACHER project funded under the European Union's Horizon 2020 research and innovation programme GA No: 768738. Brussels: eTEACHER consortium.

Robinson, L. (2011) Enabling Change Process: [http://enablingchange.com.au/enabling\\_change\\_process.pdf](http://enablingchange.com.au/enabling_change_process.pdf), [Accessed on 01.09.18]

Robinson, L. (2012). *Changeology*. Totnes, Devon: Green Books.

Robinson, L. (2018). *Enabling Change Website*. [Online] Available at: <http://enablingchange.com> [Accessed 01.9.18]



## 5 Appendix 5 – Feedback Forum 2 Materials

### 5.1 Feedback Forum 2 Facilitators Guide

Welcome and introduction		
Timing		Facilitator notes
5 minutes	<ul style="list-style-type: none"> <li>• <b>Welcome</b> participants and thank them for agreeing to be part of the focus group.</li> <li>• <b>Introduce</b> yourself and the assistant facilitator(s) [if appropriate].</li> <li>• Explain the general <b>purpose</b> of the discussion:             <ul style="list-style-type: none"> <li>○ “We are coming together today to talk about the eTEACHER project – in particular we want to hear your thoughts, opinions and ideas.”</li> </ul> </li> <li>• Explain <b>anonymity</b> of opinions shared:             <ul style="list-style-type: none"> <li>○ “We will not identify anyone by name in our report. You will remain anonymous.”</li> </ul> </li> <li>• Explain the need for <b>honesty</b>:             <ul style="list-style-type: none"> <li>○ “We need your input and want you to share your honest and open thoughts with us.”</li> </ul> </li> <li>• Explain that there are <b>no ‘right’ or ‘wrong answers</b>.             <ul style="list-style-type: none"> <li>○ “Every person's ideas and opinions are important. Speak up whether you agree or disagree. We want to hear a wide range of opinions.”</li> </ul> </li> <li>• Set out <b>ground rules</b>:             <ul style="list-style-type: none"> <li>○ “My role here is to guide the discussion. We want you to do the talking. We would like everyone to participate. Speak up, one at a time and respect the opinions of others. I may call on you if I haven't heard from you in a while.”</li> </ul> </li> <li>• Go through any <b>health and safety</b> procedures for the building. Toilets, fire drills. Ask that participants kindly</li> </ul>	<p>[Hand out consent forms to be signed before proceeding with the discussion, if</p>

	<p><i>mute or switch off mobile phones to avoid distraction – if appropriate.</i></p> <ul style="list-style-type: none"> <li>• <i>Ask participants to read and sign the consent form.</i></li> <li>• <b>[If appropriate]</b> <i>Explain the presence and purpose of <b>recording equipment</b> (to help facilitator write up notes later rather than during the focus group) and ask for permission.</i></li> <li>• <i>Explain that <b>discussion notes</b> will be analysed and included in a report but no personal data will be shared.</i></li> </ul> <p><i>*Facilitator starts digi-recorder if using.*</i></p>	<p>not already completed].</p>
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Introduction: eTEACHER and Feedback Forums		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator: explain that: We'd like to start off by talking a bit about the eTEACHER project and the purpose behind our use of Feedback Forums and your involvement today.</i></p> <p><i>Facilitator: ask if participants have any questions before proceeding to slides relevant to the topics being covered in the Feedback Forum.</i></p>	<p><i>[Start the Presentation slides explaining the project in a bit more detail and the agenda for the session.]</i></p> <p><i>[Slides 1 – 6]</i></p>

Icebreaker exercise		
Timing		Facilitator notes
2 minutes	<p><i>Facilitator: explain that before we start the activities it would be nice to be introduced to each other.</i></p> <p>Ask participants to introduce themselves and to tell the rest of the group an interesting fact about themselves</p>	<p><i>[Facilitator to start by giving an example using themselves]</i></p> <p><i>[Slide 7]</i></p>

Topics: eTEACHER App		
Timing	Guideline questions	Facilitator notes



2 minutes	<i>Facilitator:</i> As part of the eTEACHER ICT-based tools a smartphone app has been in development over the past year which will aim to encourage users to carry out actions which could result in energy savings or improved comfort. The app is in its final stages of development and this is where your input is vital for us. Your feedback today on specific elements of the app will help us refine our design so we welcome all comments, suggestions and feedback.	[Slide 8]
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Topics: Activity 1		
Timing	Guideline questions	Facilitator notes
5 minutes	<i>Facilitator:</i> We would like to start by giving you the opportunity to “design” your ideal eTEACHER app – on Handout 1 you will find a blank mobile phone screen and you will also find a sticker sheet with various icon buttons and a small description. Stick whichever icons you would like to be included in your “ideal” app to the template – you can add as many or as few as you like.	<i>Facilitator ensure all participants have Handout 1 and a sticker sheet</i>  Collect feedback via handouts.  [Slide 9]

Topics: Activity 2		
Timing	Guideline questions	Facilitator notes
2 minutes	<i>Facilitator:</i> Following on from Activity 1 we would now like to know how important you think many of the icons presented in your own opinion. Please tick or circle the appropriate answer for each of the icons shown in Handout 2. Rank them in relation to what you consider Very importance, Important, Somewhat important, Not important or Not applicable.	<i>Facilitator ensure all participants have Handout 2</i>  Collect feedback via handouts.  [Facilitator to use script provided on slides if required]  [Slide 10]

Topics: Activity 3		
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Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator explain the use of hints within the app</i></p> <p><i>Facilitator:</i> The eTEACHER app is being designed so that it includes hints or tips which users can receive mainly relating to energy conservation. These hints or tips may include aiming to save a certain amount of energy by carrying out an activity differently in the building or giving you recommendations based upon the thermal conditions of the building or predicted weather forecast. Whilst carrying out Activity 3 if you could consider what sort of hints you would appreciate and engage with and give your thoughts to us. Consider whether these hints should be specific to you in your building at a room level or whole building level, should they be given hourly, daily or weekly? What sort of hint would be most useful to you – ones to save energy or money, improve the environment or your comfort?</p> <p><i>Facilitator explain the first part of Activity 3.</i></p> <p><i>Facilitator:</i> For activity 3, we would like you to rank the examples given in your handout relating to hints or tips the app might send. Please read each example on Handout 3 and circle or tick if you would find them useful, if you're indifferent to them or whether you think they are not relevant or useful to you within this building.</p> <p><i>Facilitator to allow participants a couple of minutes to read examples and indicate answer.</i></p> <p>We would like you to think about your "ideal" hint or tip that the app could send. Please indicate on your handout what categories you think need to be included in a hint or tip to make it relevant to you and for it to be something you would want to engage with. Then why not add any of your own suggestions in the empty box at the bottom! Who knows you might see your own suggestion getting used in the final app!</p> <p><i>Facilitator to allow participants a couple of minutes to select the appropriate answers and make any suggestions before encouraging discussion with the prompts listed at the start.</i></p>	<p><i>Facilitator ensure all participants have Handout 3</i></p> <p>Collect feedback via handouts.</p> <p>Record notes on each of the discussion points – in particular quotes of interest.</p> <p>[Facilitator to use script provided on slides if required]</p> <p>[Slides 11 - 13]</p>



	<p><i>Facilitator:</i> How frequent would you like hints to be sent via the app?</p> <p>Would you be encouraged to engage more if it was specifically targeted to you?</p> <p>What should be the target for these hints – saving energy, money or improving the environment or something else?</p>	
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Topics: Activity 4		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator:</i> Now we would like you to consider some different options for displaying information in the app and ask you to rank these by how interested you are in each idea.</p> <p>On your handout 4 you will see the 8 examples shown above and a scale of interest – ranging from very interested to not interested at all. We would like you to select the relevant answer for each example so that we can rank the ideas based on the feedback from building users.</p> <p>The first example is a ladder – this shows you your improvement in energy efficiency based on your actions carried out in the building. Here if you achieved energy savings you would move up the ladder like going up levels in a game.</p> <p>The second being personal energy use information – graphs of individual room or apartment use. May include energy usage, temperatures, humidity levels etc. Please indicate what energy related information would be most interesting</p> <p>The third is whole building related energy use information</p> <p>Our 4<sup>th</sup> idea is around social networks – allowing you to link your use of the eTEACHER tool to a variety of social media sources or the option of developing a communication network with other eTEACHER users</p>	<p><i>Facilitator ensure all participants have Handout 4</i></p> <p>Collect feedback via handouts.</p> <p>[Slides 14]</p>

	<p>within the building – post your own hints or tips, report issues and spread energy related information with others.</p> <p>5<sup>th</sup> we have the energy tree – a visualisation tool which shows you how energy efficient you are being – the more energy you save the more the tree grows and flourishes.</p> <p>6<sup>th</sup> we have a leader board concept – here you would compete against other building users to save the most. You would be able to relate your own actions to others and see how energy efficient you are in comparison to others.</p> <p>7<sup>th</sup> we have the energy piggy bank – carry out energy saving actions and get rewarded with energy coins which you can save in your own energy piggy bank. Another possible way for you to see how you are doing relating to energy efficiency measures.</p> <p>Finally the 8<sup>th</sup> idea is a trophy cabinet – a function in the app which displays all the rewards you achieve from carrying out various energy conservation actions in one place.</p>	
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Topics: Activity 5		
Timing	Guideline questions	Facilitator notes
5-10 minutes	<p><i>Facilitator:</i> Now we want you to think about missions or goals with the app, and how interested you would be in these functions.</p> <p><i>Facilitator to encourage participants to consider the points given in slide and state that these are key areas we would love to encourage discussion around:</i></p> <p><i>Facilitator:</i> For activity 5 it is very similar to Activity 3, we would like you to rank the examples given in your handout relating to missions or goals the app might set. Please read each example on Handout 5 and circle or tick if you would take part, might take part or wouldn't take part in each example.</p> <p><i>Facilitator to allow participants a couple of minutes to read examples and indicate answer.</i></p>	<p><i>Facilitator ensure all participants have Handout 5</i></p> <p>Collect feedback via handouts.</p> <p>Record notes on each of the discussion points – in particular quotes of interest.</p> <p>[Facilitator to encourage discussion by use of further prompt questions provided with activity]</p> <p>[Slides 15 - 18]</p>




	<p><i>Facilitator:</i> Again, we would like you to think about your “ideal” mission or goal that the app could set. Please indicate on your handout what categories you think need to be included in a mission or goal to make it relevant to you and for it to be something you would want to engage with. Then why not add any of your own suggestions in the empty box at the bottom! Who knows you might see your own suggestion getting used in the final app!</p> <p><i>Facilitator to allow participants a couple of minutes to select the appropriate answers and make any suggestions before encouraging discussion with the prompts listed at the start.</i></p> <p><i>Facilitator:</i> How frequent would you like missions to be available on the app?</p> <p>Would you be encouraged to engage more and sign up to the missions if you received a badge or points in the app for completing them?</p> <p>What should be the target for these missions – saving energy, money or improving the environment?</p> <p><i>Facilitator to thank participants for their input in today’s session</i></p>	
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Topics: Pulse update		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator:</i> eTEACHER is not only trying to improve energy use in this building but also improve the building environment. To do this we need to monitor the indoor environment using sensors but we mainly want to collect feedback from the users over how satisfied they are with the indoor environment – and this is where the smiley face buttons come into play!</p> <p><i>Facilitator to remind participants about the Pulse system and encourage participants to keep using the system:</i></p> <p><i>Facilitator to provide update on use of system so far.</i></p>	<p>[Facilitator to use script provided on slides if required]</p> <p>[Slides 19 – 20]</p>


Consolidation and close		
Timing	Guideline questions	Facilitator notes
2 minutes	<p><i>Facilitator thanks participants for their contributions and highlights anything of particular interest that came up during the session.</i></p> <p><i>Facilitator reiterates anonymity and what the findings will be used for.</i></p> <p><i>Facilitator asks respondents if there is anything that they would like to ask.</i></p> <p><i>Facilitator highlights participants' opportunities to keep up to date/stay in touch with project, slide 21 - 23.</i></p>	<p>Record any notes of questions raised.</p> <p>[Slides 21-23]</p>


## 5.2 Feedback Forum 2 Presentation Slides



**End-user Tools to Empower and raise  
Awareness of behavioural CHange  
towards EneRgy efficiency**

Innovation Action – GA n°768738


 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 768738




## The project

eTEACHER is a three year project (Oct 2017 – Sept 2020) funded by the Horizon 2020 EU Innovation Action which aims to empower end-users in buildings to become more energy efficient.

It will achieve this by designing ICT solutions which will help users become more aware of their energy consumption.






## Objectives

The eTEACHER solution aims to help building users feel more comfortable in their environment, be it their home, workplace or medical centre.

Therefore their personal wellbeing could stand to become enhanced through the IT tools developed.





## Where is eTEACHER?


The eTEACHER IT toolbox will be trialled in 12 pilot buildings across Romania, Spain and the UK. These buildings vary greatly in terms of their age and their kind of use and audience.

<b>12</b>	<b>3</b>	<b>5,000</b>	<b>3</b>
PILOTS	EUROPEAN COUNTRIES	PEOPLE INVOLVED	CLIMATIC AREAS


**eTEACHER IS DEMONSTRATED IN...**

 <div style="background-color: #0072bc; color: white; padding: 5px; margin-top: 5px;"> <b>SPAIN</b>            2 HEALTHCARE CENTRES            2 SCHOOLS            1 RESIDENTIAL BUILDING            1 OFFICE         </div>	 <div style="background-color: #0072bc; color: white; padding: 5px; margin-top: 5px;"> <b>UNITED KINGDOM</b>            1 SCHOOL            1 OFFICE         </div>	 <div style="background-color: #0072bc; color: white; padding: 5px; margin-top: 5px;"> <b>ROMANIA</b>            4 RESIDENTIAL BUILDINGS         </div>
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## Your voice



Your input, opinions and feedback are vital for the project. We want to ensure that the eTEACHER tool meets your needs, the buildings needs and is something that you will want to use.

Remember there is no right or wrong answers in these meetings – we are really just wanting to hear the honest opinions of building users.




## Today's session

Today we would like to collect information about the design of our ICT-based tool. To do this we would like your involvement in 5 activities;

- What your "ideal" app might include
- What information is useful to you
- Your opinion on "hints"
- Ranking ideas for possible app content
- Your opinion on "missions"


If you have any suggestions please feel free to share these with us!



## Quick ice-breaker

### Introduce yourself!

Tell us an interesting fact about yourself that people might not know or guess!







## eTEACHER app

eTEACHER is developing a smartphone app as part of our ICT based tools, which aims to encourage building users to save energy and improve their comfort.

The app has been under development during the 2<sup>nd</sup> year of the project but we hope to refine it through your input!

So we welcome all comments, suggestions and feedback today!





## ACTIVITY 1

### What information would you like to see in the app?

- Attach stickers to Handout 1 to show us what your “ideal” app would include.



## ACTIVITY 2

### How important is the information shown in the app?

- Please rank, in your own opinion, the level of importance specific information which might be included in the app.
- Tick or circle the appropriate answer in Handout 2.




## eTEACHER app

### The app will be designed to include energy hints and tips.

It is important for us to know what sort of hints are useful to you.

- Relating to specific energy use
- More general vs specific to the building, room, you?
- Should it include savings in terms of energy, cost, environmental impact?
- Should hints be available hourly, daily, weekly?






## ACTIVITY 3


### Part 1: Hints

On Handout 3 please rank the “hint” examples


- Good – useful to you
- Indifferent
- Bad – not relevant or useful to you




Useful




Indifferent



Not useful



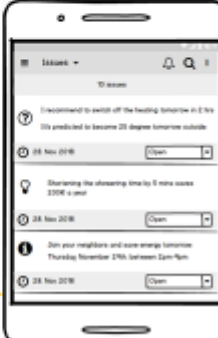


## ACTIVITY 3

### Part 2: Your “ideal” hints

Using the template box on your handout tick the relevant information which you would like included in a hint

Then have a go at suggesting some of your own hints that you think would work well in the eTEACHER app





## ACTIVITY 4


On Handout 4 rank these different ideas in relation to which you find the most interesting.









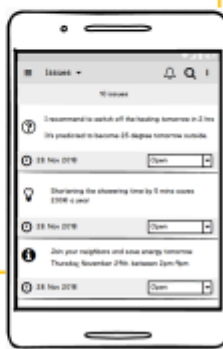




## *eTEACHER app*

Similar to the “hints” the app will be designed to include “missions” or “goals” which you can opt to take part in.

Again we are interested in knowing what is useful to you.

- Daily, weekly or monthly missions
- Teams vs individual?
- Should it include targets in terms of energy, cost, environmental impact?
- Would you want badges, points, trophies for completing them?






## ACTIVITY 5


### Part 1: Goals & Missions

On Handout 5 please rank the “mission” examples


- Yes I'd take part
- I might take part
- No I would not take part




Yes




Maybe



No







## ACTIVITY 5

### Part 2: Your “ideal” goal/mission

Using the template box on your handout tick the relevant information which you would like included in a goal or mission

Then have a go at suggesting some of your own goals or missions that you think would work well in the eTEACHER app!





## Your responses

**Thank you for contributing today!**

Your feedback will help us in the final design stages of our tool.

It has also let us understand more about the needs from such an ICT-based tool within your building.



## Reminder: IEQ Monitoring

The Pulse system is now up and running in this building!

Please use these buttons and encourage other building users too!






## Pulse update


***\*Insert update on use of the Pulse system in the specific pilot building\****






Thank you again!

Any questions?



## Stay in touch




**Follow us on**

Website – [eteacher-project.eu](http://eteacher-project.eu)

Twitter - [@eteacherEU](https://twitter.com/eteacherEU) #eteacherEU


LinkedIn - [eTEACHER](https://www.linkedin.com/company/eTEACHER) - [end-users'tools to empower energy efficiency](#)



**Contact us**

[coordinator@eteacher-project.eu](mailto:coordinator@eteacher-project.eu)

[communication@eteacher-project.eu](mailto:communication@eteacher-project.eu)





**eTEACHER**  
Empowering Energy Education

## THANK YOU

End-user Tools to Empower and raise  
Awareness of behavioural **CH**ange  
towards **En**eRgy efficiency

Innovation Action - GA n°768738

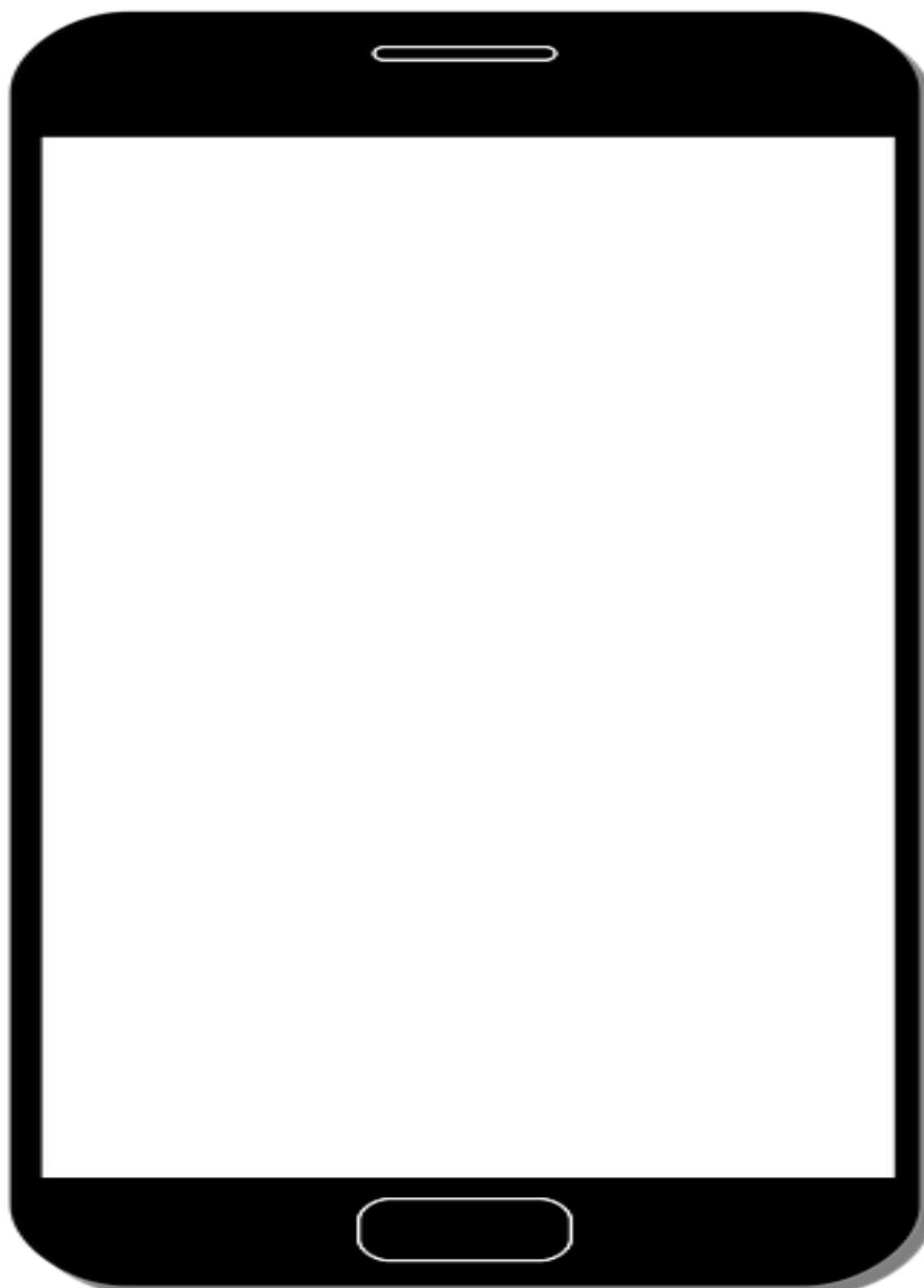




## 5.3 Feedback Forum 2 Participant Handouts










### 5.3.1 Handout 1: Activity 1

Attach the relevant stickers to this template to show us what your “ideal” eTEACHER app might include.



### 5.3.2 Handout 2: Activity 2

Please rank, in your own opinion, the level of importance specific information which might be included in the app

	<b>Energy information and data</b> – see recorded energy use data	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>Energy Hints and Tips</b> – get recommendations to save energy, improve comfort etc.	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>eTEACHER news</b> – keep up to date with project developments	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>Social networks</b> – share eTEACHER related posts on your social media	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>Personal profile</b> – tailor the app to your own preferences	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>Building profile</b> – get information relating to the whole building, not just your own room or apartment	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>Trophies and rewards</b> – collect tokens for completing energy saving actions	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>Energy efficiency ladder</b> – move up the ladder with energy saving actions	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>Reporting function</b> – log any issues with FM and receive feedback	Very Important	Important	Somewhat Important	Not Important	Not Applicable

### 5.3.3 Handout 3: Activity 3 Part 1

Rank the examples given relating to hints or tips the app might send. Circle or tick if you would find them useful, indifferent to them or whether you think they are not relevant or useful to you within this building.

Hint example			
"turning off your thermostat while you're not home can save you 15% on your energy bill"	Yes, it is useful to me	I am indifferent to this	No, this is not useful or relevant
"shortening your shower time by 5 minutes can save you about £/€ 200 a year"	Yes, it is useful to me	I am indifferent to this	No, this is not useful or relevant
"open windows instead of relying on an extractor fan – no electricity used, no cost!"	Yes, it is useful to me	I am indifferent to this	No, this is not useful or relevant
"turn appliances off at the plug to save an average of £/€ 30 a year"	Yes, it is useful to me	I am indifferent to this	No, this is not useful or relevant
"turning your thermostat down by just 1°C can save you as much as £/€ 75 per year!"	Yes, it is useful to me	I am indifferent to this	No, this is not useful or relevant
"switching your light bulbs from incandescent to LEDs can reduce up to 1300 pounds of carbon dioxide over the life of the bulb!"	Yes, it is useful to me	I am indifferent to this	No, this is not useful or relevant
"90% of a washing machine's energy expenditure is spent heating the water, so if you wash your clothes at 30-40°C you're saving a significant amount of money"	Yes, it is useful to me	I am indifferent to this	No, this is not useful or relevant
"switching your old gas/oil boiler for an electric model could save a third of your fuel costs"	Yes, it is useful to me	I am indifferent to this	No, this is not useful or relevant
"by keeping cool during the day, and warming up with blankets and sweaters, you can significantly reduce your carbon footprint"	Yes, it is useful to me	I am indifferent to this	No, this is not useful or relevant

### 5.3.4 Handout 3: Activity 3 Part 2

Create your “ideal” hint – tick the categories which you believe should be included in the hints provided by the eTEACHER app.

#### Main topic for hint:

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> general energy consumption | <input type="checkbox"/> heating system use      | <input type="checkbox"/> carbon emissions           |
| <input type="checkbox"/> heating consumption        | <input type="checkbox"/> lighting levels and use | <input type="checkbox"/> forecasted weather         |
| <input type="checkbox"/> cooling consumption        | <input type="checkbox"/> cooling system use      | <input type="checkbox"/> energy events              |
| <input type="checkbox"/> lighting consumption       | <input type="checkbox"/> hot water consumption   | <input type="checkbox"/> window and shading use     |
| <input type="checkbox"/> appliance consumption      | <input type="checkbox"/> indoor temperatures     | <input type="checkbox"/> alternative energy sources |
|   | <input type="checkbox"/> humidity levels         | <input type="checkbox"/> energy information         |

#### Action suggested by hint:

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> individual actions | <input type="checkbox"/> improvements to building fabric | <input type="checkbox"/> new technology suggestions |
| <input type="checkbox"/> group action       | <input type="checkbox"/> change HVAC system use          | <input type="checkbox"/> changes to personal use    |
| <input type="checkbox"/> at building level  | <input type="checkbox"/> altering set-points             | <input type="checkbox"/> changes to building use    |





#### Impact/saving of hint:






- |   |   |  |
|---|---|--|
| <input type="checkbox"/> daily kWh saving       | <input type="checkbox"/> daily £/€ saving                         | <input type="checkbox"/> monthly equivalent CO <sub>2</sub> saving               |
| <input type="checkbox"/> weekly kWh saving      | <input type="checkbox"/> weekly £/€ saving                        | <input type="checkbox"/> annual equivalent CO <sub>2</sub> saving                |
| <input type="checkbox"/> monthly kWh saving     | <input type="checkbox"/> monthly £/€ saving                       | <input type="checkbox"/> equivalent trees planted                                |
| <input type="checkbox"/> annual kWh saving      | <input type="checkbox"/> annual £/€ saving                        | <input type="checkbox"/> equivalent energy use for other activities e.g. driving |
| <input type="checkbox"/> daily comparison (%)   | <input type="checkbox"/> daily equivalent CO <sub>2</sub> saving  |  |
| <input type="checkbox"/> weekly comparison (%)  | <input type="checkbox"/> weekly equivalent CO <sub>2</sub> saving |  |
| <input type="checkbox"/> monthly comparison (%) |   |  |
| <input type="checkbox"/> annual comparison (%)  |   |  |

Let us know your own suggestions of hints that you think would work well in your building.

### 5.3.5 Handout 4: Activity 4




Consider the different examples given for displaying information in the app and rank these by how interested you are in each idea.

	<b>1. Energy ladder</b> – this shows you your improvement in energy efficiency based on your actions carried out in the building. If you achieved energy savings, you would move up the ladder like going up levels in a game	Very Interested	Interested	Somewhat Interested	Not Interested	Not Applicable
	<b>2. Personal energy use information</b> – graphs of individual room or apartment use.	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	If this includes separate energy usage – lighting, heating etc. temperatures, humidity levels etc. Please indicate what energy related information would be most interesting	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	If this includes temperatures	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	If this includes humidity levels and CO2 levels	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>3. Whole building related energy use information</b> – graphs of whole building level consumption	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>4. Social networks</b> – share eTEACHER related posts on various social platforms	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	If this included <b>Facebook</b>	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	If this included <b>Twitter</b>	Very Important	Important	Somewhat Important	Not Important	Not Applicable

	If this included a building specific <b>forum group</b>	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	If this included <b>LinkedIn</b>	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	If this included <b>Instagram</b>	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>5. The energy tree</b> – a visualisation tool which shows you how energy efficient you are being – the more energy you save the more the tree grows and flourishes	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>6. Leader board</b> – compete against other building users to save the most. You would be able to relate your own actions to others and see how energy efficient you are in comparison to others.	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>7. Energy piggy bank</b> – carry out energy saving actions and get rewarded with energy coins which you can save in your own energy piggy bank. Another possible way for you to see how you are doing relating to energy efficiency measures	Very Important	Important	Somewhat Important	Not Important	Not Applicable
	<b>8. Trophy cabinet</b> – a function in the app which displays all the rewards you achieve from carrying out various energy conservation actions in one place.	Very Important	Important	Somewhat Important	Not Important	Not Applicable

### 5.3.6 Handout 5: Activity 5 Part 1

Rank the examples given relating to missions or goals the app might set. Please read each example and circle or tick if you would take part, might take part or wouldn't take part in each example.

Mission example			
"Stay below X £/€ of heating consumption per day for a week"	Yes, I'd take part	I might take part	No, I would not take part
"Be the classroom/apartment/department with the highest % saving from appliances this week"	Yes, I'd take part	I might take part	No, I would not take part
"Energy consumption challenge - stay below 60kWh per day for the week"	Yes, I'd take part	I might take part	No, I would not take part
"Join your neighbors and save energy tomorrow. Tuesday, August 21st. between 2pm-9pm"	Yes, I'd take part	I might take part	No, I would not take part
"Find out how many kWh can you save in one week by using lighting following eTEACHER instructions"	Yes, I'd take part	I might take part	No, I would not take part
"Energy weekly warrior – can you complete the weekly energy saving action before the week is up"	Yes, I'd take part	I might take part	No, I would not take part
"Eco-Actions – reduce your carbon footprint by reducing your heating 1 degrees"	Yes, I'd take part	I might take part	No, I would not take part
"Save X % of energy consumption compared to last month"	Yes, I'd take part	I might take part	No, I would not take part
"Power off challenge week – can you reduce your consumption by ensuring all lights and appliances are switched off when not in use"	Yes, I'd take part	I might take part	No, I would not take part
"Save X £/€ in lighting consumption this week"	Yes, I'd take part	I might take part	No, I would not take part
"Feel the breeze – save X% of cooling energy by making use of windows instead to cool rooms down"	Yes, I'd take part	I might take part	No, I would not take part
"Sharing is caring – pass on an energy conservation tip to another building user today"	Yes, I'd take part	I might take part	No, I would not take part



### 5.3.7 Handout 5: Activity 5 Part 2

Create your “ideal” mission – tick the categories which you believe should be included in the missions provided by the eTEACHER app.

**Main topic for mission:**

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> general energy consumption | <input type="checkbox"/> appliance consumption   | <input type="checkbox"/> indoor temperatures    |
| <input type="checkbox"/> heating consumption        | <input type="checkbox"/> heating system use      | <input type="checkbox"/> carbon emissions       |
| <input type="checkbox"/> cooling consumption        | <input type="checkbox"/> lighting levels and use | <input type="checkbox"/> energy events          |
| <input type="checkbox"/> lighting consumption       | <input type="checkbox"/> cooling system use      | <input type="checkbox"/> window and shading use |
|   | <input type="checkbox"/> hot water consumption   | <input type="checkbox"/> energy information     |

**Duration of mission:**

- |                                |                                 |                                  |
|--------------------------------|---------------------------------|----------------------------------|
| <input type="checkbox"/> daily | <input type="checkbox"/> weekly | <input type="checkbox"/> monthly |
|--------------------------------|---------------------------------|----------------------------------|

**Impact of mission:**

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> kWh saving                        | <input type="checkbox"/> equivalent trees planted                                | <input type="checkbox"/> change in use           |
| <input type="checkbox"/> £/€ saving                        | <input type="checkbox"/> equivalent energy use for other activities e.g. driving | <input type="checkbox"/> points/trophies         |
| <input type="checkbox"/> equivalent CO <sub>2</sub> saving |  | <input type="checkbox"/> competition with others |

**Frequency of missions:**

- |                                 |   |
|---------------------------------|---|
| <input type="checkbox"/> hourly | <input type="checkbox"/> weekly             |
| <input type="checkbox"/> daily  | <input type="checkbox"/> opt in as and when |

**Specification of mission:**

- |                                     |                                    |   |
|-------------------------------------|------------------------------------|---|
| <input type="checkbox"/> individual | <input type="checkbox"/> team/room | <input type="checkbox"/> building level |
|-------------------------------------|------------------------------------|---|

Let us know your own suggestions of hints that you think would work well in your building.



## 5.4 Feedback Forum 2 Reporting Template

A report for each Feedback Forum should be prepared by the facilitators and sent to CEM and DMU to ensure that the findings can be collated and disseminated with the relevant project stakeholders. The report should be sent in English with relevant quotes translated.

For consistency reasons results of each Feedback Forum should be reported in the specific format described below.

### 1. *Date/place/time that the Feedback Forum took place and number of participants*

Feedback Forum #	
eTEACHER pilot building	
Country	
Dates	
Number of participants	

### 2. *Short description of arranging Feedback Forum*

Briefly describe: How where the participants informed about the feedback forum? Was it difficult for participants to attend the feedback forum? Any other problems with feedback forum?

Comments

### 3. *Executive Summary*

Write the main conclusions/recommendations resulting from the feedback forum. Detailed responses for specific topics covered in the Feedback Forum are addressed in Section 4 – this is for the key take home messages.

Comments

### 4. *Summary of each Feedback Forum discussion point (as identified in Facilitators Guide)*

Quote the most repeated but also meaningful responses and write a short summary of the discussion made for each of the topics covered in the Feedback Forum.



Give the responses in “quotes” as uttered by the users and in bullets (bullet point list, one bullet per comment). Provide also the number of participants who expressed the same thoughts.

Where you find it necessary you can also quote a response that was an exception to show a different minority opinion or highlight an interesting idea. In this case, you should state that it is the response of only one participant.

**Discussion: Activity 3**

Record notes on discussion points from Activity 3 – app “hints”.

**Discussion: Activity 5**

Record notes on each of the discussion points from Activity 5 – app “missions”

**Discussion: Pulse system**

Record notes on each of the discussion points relating to the use of the Pulse system so far.

#### Consolidation and close

Record any notes of questions raised.

**Please ensure that scanned copies of all handouts are provided to DMU for analysis.**



## 6 Appendix 6 – Building User Survey (pre & post eTEACHER deployment)



### Energy, Comfort, the building & you! Building User Survey (Pre- & Post- eTEACHER Questions)

The purpose of this questionnaire is to learn more about you as a building user, your comfort experience in the building, your perceptions of energy in general, your use of lighting, heating/cooling systems and appliances in the building. *[to be added for follow-up survey]* We also want to know what you think of the eTEACHER tool, did you use it, what you liked or didn't like, whether you think it has improved your awareness of energy and personal comfort etc. These responses will be used to help the evaluation of the eTEACHER tool's impact in this building, therefore you may recognize some of the questions asked. All data collected and processed from this questionnaire will be anonymized and stored in a secure location.

Completing this questionnaire should take around 5-10 minutes of your time.

### All about you

Please select the relevant building which you use. *(Specific country pilots listed in relevant versions – English = UK pilots, Romanian = InCity pilots, Spanish = Spain pilots)*

Djanogly City Academy, UK	Torrente Ballester, Spain	Arco Iris, Spain	OAR, Spain	Council House, UK
Badajoz Apartment block, Spain	Guarena Health Care Centre, Spain	Villafranca Health Care Centre, Spain	InCity A, Romania	InCity B, Romania
InCity C, Romania	InCity D, Romania			



Please select the best category which best describes the type of building user you are.

Staff*	Energy/Facility staff/manager	Student	Visitor	Tenant/owner
--------	-------------------------------	---------	---------	--------------

Age bracket (tick the appropriate range):

11-18		30-39		50-59		70-79		90-99	
19-29		40-49		60-69		80-89		100+	

*[to be asked in the follow-up survey]* Did you complete the previous user survey last year?

Yes		No	
-----	--	----	--

## Comfort & you

1. In general how satisfied are you with the comfort level of the building?

Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
----------------	-----------	---------	--------------	-------------------

2. If dissatisfied, select which best describes your source of discomfort in the building. Feel free to select multiple options if appropriate.

Too warm		Too cold	
Not enough natural light		Lighting too artificial	
Too much air movement		Not enough air movement	
Incoming sun		Hot/Cold surrounding surfaces	
Drafts from windows		Drafts from vents	
Heating/Cooling system not responding quickly enough			

3. Which of the following adaptive measures do you carry out to improve your comfort level in this building? Feel free to select multiple options if appropriate.

Add layers of clothing		Remove layers of clothing	
Have a hot drink		Have a cold drink	
Increase activity levels		Decrease activity levels	
Move to a different part of the building		Opening windows	
Closing windows			

## Energy & you



## 4. Which of the following do you understand in relation to energy consumption?

kWh	Cost	% used compared to previous use	Carbon footprint (CO <sub>2</sub> )
-----	------	---------------------------------	-------------------------------------

## 5. In general, how aware are you of the energy used in this building? Select the most appropriate statement.

Very aware	Occasionally think about it	Neither	Not very aware	Never think about it
------------	-----------------------------	---------	----------------	----------------------

## 6. Are you aware of any of the following energy behaviours occurring in the building? (Check all that apply)

Lights being left on in empty rooms		Heating on in areas not being used	
Heating left on when not needed		Computers left on when not in use	
Computers left on stand-by overnight		TVs left on	
Chargers left plugged in but not being used		Air-conditioning on when not needed	
Additional heat sources being used		Additional cooling sources being used	
Thermostat set too high		Inefficient use of appliances (dishwashers half empty, washing at high temperatures)	

## 7. How often do you currently take actions to help reduce energy consumption in this building?

Numerous times each day	Daily	Weekly	Monthly	Rarely
-------------------------	-------	--------	---------	--------

## 8. Please indicate how easy or hard it is for you to make any of the following measures in this building.

	Do it already	Very easy	Somewhat easy	Neither easy nor hard	Somewhat hard	Extremely hard	Do not have control over
Turn off appliance							
Turn off lights							
Use energy efficient bulbs							
Change heating thermostat settings							
Change cooling set-point settings							
Change radiator settings							



9. How important do you think it is to save energy in this building?

Very important	Somewhat important	Neither	Not important	Not important at all
----------------	--------------------	---------	---------------	----------------------

10. Please indicate the level of importance to you when making energy savings,

	Most important	Somewhat important	Neither	Somewhat unimportant	Least important
Environmental impact					
Cost					
Personal Comfort					
How easy it is					
Personal benefit from it					
How others view you					

**Lighting use** - we would now like you to think specifically about lighting use within this building

11. Do you have any access to controls for the lighting in your room/building?

Yes		No	
-----	--	----	--

12. Please indicate how often you carry out the following actions

	Hourly	Daily	Weekly	Monthly	Rarely
Use additional lighting sources e.g. lamps					
Utilise natural light					
Turn lights off in empty rooms/spaces					
Manually turn lights on in the building					

**Heating/Cooling System use** - we would now like you to think specifically about heating and cooling system use within this building

13. Do you have any access to change the heating and/or cooling settings in the building?

Yes, both heating and cooling		Yes, heating only		Yes, cooling only		No	
-------------------------------	--	-------------------	--	-------------------	--	----	--



14. Please indicate how often you carry out the following heating/cooling related actions

	Hourly	Daily	Weekly	Monthly	Rarely	Not applicable
Change the heating set-point						
Change the cooling set-point						
Use portable heaters or additional heat sources						
Use personal fans or additional cooling sources						

**Appliance use** - we would now like you to think specifically about use of appliances within this building

15. Please indicate your typical use of the following appliances, in this building

	Hourly	Daily	Weekly	Monthly	Rarely	Not applicable
Computers						
Laptops/tablets						
Printers						
Smartboards						
Projectors						
Televisions/screens						
Mobile phones						
Chargers (mobiles, tablets, laptops etc.)						
Washing machine						
Dishwasher						

16. In general, how aware are you of the energy consumed by appliances in this building? Select the most appropriate statement.

Very aware	Occasionally think about it	Neither	Not very aware	Never think about it
------------	-----------------------------	---------	----------------	----------------------

17. Please rate your confidence using ICT, such as a computer or other related technology for general purposes?

Not at all confident	Somewhat not confident	Unsure	Somewhat confident	Very confident
----------------------	------------------------	--------	--------------------	----------------





**[The following questions will only be used in the follow-up survey post-eTEACHER to evaluate the impact of the eTEACHER tool]**

## **eTEACHER & you**

18. Are you aware of the eTEACHER tool being used in this building?

Yes		No	
-----	--	----	--

19. Have you used the eTEACHER tool?

Yes		No	*If no then skip to end of survey*
-----	--	----	------------------------------------

20. How often have you used the eTEACHER tool?

Numerous times each day	Daily	Weekly	Monthly	Rarely
-------------------------	-------	--------	---------	--------

21. Please rank the extent to which you agree to the following statements relating to your use of the eTEACHER tool.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. I would like to use the eTEACHER tool frequently	1	2	3	4	5
2. I found the eTEACHER tool unnecessarily complex	1	2	3	4	5
3. I thought the eTEACHER tool was easy to use	1	2	3	4	5
4. I think that I need the support of a technical person to use the eTEACHER tool	1	2	3	4	5



5. I found the various functions in the eTEACHER tool were well integrated	1	2	3	4	5
6. I thought that there was too much inconsistency in the eTEACHER tool	1	2	3	4	5
7. I think most people would learn to use the eTEACHER tool very quickly	1	2	3	4	5
8. I found the eTEACHER tool very awkward to use	1	2	3	4	5
9. I felt very confident using the eTEACHER tool	1	2	3	4	5
10. I needed to learn a lot of things before I could get going with the eTEACHER tool	1	2	3	4	5

22. What did you like about the eTEACHER tool specifically?

*[open text box for response]*

23. How do you think the eTEACHER tool could be improved?

*[open text box for response]*

24. Do you think the eTEACHER tool has increased your awareness of energy use within this building?

Yes		No	
-----	--	----	--

25. Do you think the eTEACHER tool has changed your energy use within this building?

Yes		No	
-----	--	----	--

26. Would you recommend the eTEACHER tool?

Yes		No	
-----	--	----	--

**Thank you for completing this questionnaire, your responses are extremely valuable to the project.**



## 7 Appendix 7 – Feedback Forum 3 Materials

### 7.1 Feedback Forum 3 Facilitators Guide

Welcome and introduction		
Timing		Facilitator notes
5 minutes	<ul style="list-style-type: none"> <li>• <b>Welcome</b> participants and thank them for agreeing to be part of the focus group.</li> <li>• <b>Introduce</b> yourself and the assistant facilitator(s) [if appropriate].</li> <li>• Explain the general <b>purpose</b> of the discussion:             <ul style="list-style-type: none"> <li>○ “We are coming together today to talk about the eTEACHER project – in particular we want to hear your thoughts, opinions and ideas.”</li> </ul> </li> <li>• Explain <b>anonymity</b> of opinions shared:             <ul style="list-style-type: none"> <li>○ “We will not identify anyone by name in our report. You will remain anonymous.”</li> </ul> </li> <li>• Explain the need for <b>honesty</b>:             <ul style="list-style-type: none"> <li>○ “We need your input and want you to share your honest and open thoughts with us.”</li> </ul> </li> <li>• Explain that there are <b>no ‘right’ or ‘wrong answers</b>.             <ul style="list-style-type: none"> <li>○ “Every person's ideas and opinions are important. Speak up whether you agree or disagree. We want to hear a wide range of opinions.”</li> </ul> </li> <li>• Set out <b>ground rules</b>:             <ul style="list-style-type: none"> <li>○ “My role here is to guide the discussion. We want you to do the talking. We would like everyone to participate. Speak up, one at a time and respect the opinions of others. I may call on you if I haven't heard from you in a while.”</li> </ul> </li> <li>• Go through any <b>health and safety</b> procedures for the building. Toilets, fire drills. Ask that participants kindly</li> </ul>	<p>[Hand out consent forms to be signed before proceeding with the discussion, if</p>



	<p><i>mute or switch off mobile phones to avoid distraction – if appropriate.</i></p> <ul style="list-style-type: none"> <li>• <i>Ask participants to read and sign the consent form.</i></li> <li>• <i><b>[If appropriate]</b> Explain the presence and purpose of <b>recording equipment</b> (to help facilitator write up notes later rather than during the focus group) and ask for permission.</i></li> <li>• <i>Explain that <b>discussion notes</b> will be analysed and included in a report but no personal data will be shared.</i></li> </ul> <p><i>*Facilitator starts digi-recorder if using.*</i></p>	not already completed].
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Introduction: eTEACHER and Feedback Forums		
Timing	Guideline	Facilitator notes
5 minutes	<p><i>Facilitator:</i> Welcome to our 3rd Feedback Forum for the eTEACHER project.</p> <p>Before we get into our discussions today, we'd like to start off by talking a bit about the eTEACHER project and the purpose behind our use of Feedback Forums and your involvement today. Some of you may have heard it all before, but it can be a gentle reminder to those who have and a short introduction to the project for those who have not been to one of our Feedback Forums before.</p> <p>eTEACHER is a 3 year H2020 funded project aiming to design and deploy ICT based solutions in order to empower end-users in buildings towards being more energy efficient.</p> <p>It involves a total of 12 pilot buildings, as you can guess this is one of them, across three EU countries and includes various building types.</p> <p>Core to the success of any tool developed by the project is you and your voice! To develop an effective and useful ICT solution we must first understand what you as building users want and need. This is where these feedback forums come into play – we want to hear your honest thoughts, opinions and suggestions for the</p>	<p><i>[Start the Presentation slides explaining the project in a bit more detail, importance of participants input for project and the agenda for the session. – use script included with slides if needed]</i></p> <p><i>[Slides 1 – 5]</i></p> <p><i>Facilitator: ask if participants have any questions before proceeding to slides relevant to the topics being covered in the Feedback Forum.</i></p>

	<p>project so that we can ensure our tool meets your needs, the buildings needs and is something which you will want to use.</p> <p>Please remember that to us there are no right or wrong answers in these feedback forums - Every person's ideas and opinions are important. Speak up whether you agree or disagree. We want to hear a wide range of opinions and honest feedback on our ideas presented.</p> <p>Today's session will focus on the app prototype. We will present you with a "journey" through the app's features and give you some information relating to them and then we would value your honest feedback and opinions around certain elements of our prototype.</p> <p>Just to bare in mind this is the app prototype so not the final tool, and therefore your feedback today can help us tweak and refine certain elements before a final version is produced.</p>	
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eTEACHER update		
Timing		Facilitator notes
2 minutes	<p><i>Facilitator:</i> Before we start the discussions we would like to give you a quick update on our project currently. As some of you might be aware we are actually coming to the end of our 2nd year for the project now.</p> <p>Earlier in the summer we had our 18 month review with the EU Commission which looked at our project progress over the 1st 18 months. We are delighted to report that the EU were very happy with the project and gave some constructive feedback for improving our project going forward.</p> <p>During our 2nd year (since last October) we have focused predominantly on ensuring our monitoring devices were installed in all of the pilot buildings, which at times proved challenging but we managed to overcome many issues. A great part of the 2nd year has been spent developing our eTEACHER tools, with input from these FF sessions, and we are now in the latter stages of refining the final tools before we</p>	<p>[Facilitator to use slide to update on project progress]</p> <p>[Slide 6]</p>



	get to roll them out across all twelve pilot buildings in the next coming months.	
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Topics: eTEACHER App		
Timing	Guideline questions	Facilitator notes
2 minutes	<p><i>Facilitator:</i> So moving on to our focus of today's session.</p> <p>As mentioned, as part of the eTEACHER ICT-based tools a smartphone app has been in development over the past year which will aim to encourage users to carry out actions which could result in energy savings or improved comfort. The app is in its final stages of development and this is where your input is vital for us. Your feedback today on specific elements of the app will help us refine our design so we welcome all comments, suggestions and feedback.</p> <p>So we plan to use images of our prototype app today with you and go on a "journey" through the app's appearance and functionality to get your feedback and opinions.</p>	<p>[Facilitator to use slide]</p> <p>[Slide 7]</p>

Topics: App journey: log in		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator:</i> So welcome to the eTEACHER app. On opening you will be asked to login with a username and password.</p> <p><i>Facilitator to encourage discussion around following questions:</i></p> <p><b>Q – Does having to sign in to the app put you off using it?</b></p> <p><b>Q – Do you feel more secure using the app, knowing it requires a login to access it?</b></p>	<p>[Facilitator to use slide]</p> <p>[Slide 8]</p> <p>[Facilitator to record discussion points relevant to questions]</p>



Topics: App journey: welcome screen		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator:</i> On login you will see options for each of our buildings. You select which one is relevant to you to access the information specific to that building.</p> <p><i>Facilitator to encourage discussion around following questions:</i></p> <p><b>Q – What are your initial thoughts on having to select the building upon login?</b></p> <p><b>Q – What would you prefer to see upon login (if anything different)?</b></p> <p><i>**Click to next slide**</i></p> <p><i>Facilitator:</i> You also get a welcome banner at the top of the screen. This includes a quick summary if you have any active engagement with the app – this could be in the form of any missions or hints you selected as wanting to take part in or achieve.</p> <p><i>**Click to next slide**</i></p> <p><i>Facilitator:</i> Right at the top of the screen there is also a notification bell which similarly can be used to see any active engagement with the app and any activities which you are taking part in or have completed</p> <p><i>**Click to next slide**</i></p> <p><i>Facilitator:</i> At the top left hand corner of the screen you will see a menu button. If selected on this screen it will show you the different pilot buildings as your options.</p> <p><i>**Click to next slide**</i></p> <p><i>Facilitator:</i> However if you click the menu after selecting your relevant building then you will see menu options as above, which are all specific to that building.</p>	<p>[Facilitator to use slides]</p> <p>[Slide 9-13]</p> <p>[Facilitator to record discussion points relevant to questions]</p>

Topics: App journey: recommendations



Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator:</i> If you select recommendations, this will show you recommendations for your specific building, or room and how you might benefit from these. The recommendations are generated by an algorithm developed by project partners which analyses data specific to the building/room/apartment. Therefore the recommendations are specific to the conditions and user behaviour in the building/room/apartment.</p> <p><i>Facilitator to encourage discussion around following questions:</i></p> <p><b>Q – Do you think recommendations is the best name for this menu option?</b></p> <p><b>Q – Would you prefer separate menu options for hints/recommendations and missions?</b></p> <p><i>Facilitator:</i> The recommendations will be presented in a scroll down menu like the following</p> <p><i>*click to next slide*</i></p> <p><i>Facilitator:</i> The recommendations will suggest a specific action and give the associated benefit alongside the action. You will have the opportunity to mark recommendations which you carry out or plan to carry out. As previously mentioned these recommendations will be generated from an algorithm using building data and therefore the associated benefit should relate to that action in your specific building. We are also using the feedback from our last feedback forum to help construct useful recommendations for each pilot.</p> <p><i>Facilitator to encourage discussion around following questions:</i></p> <p><b>Q – Do you think you will use the recommendations menu option?</b></p> <p><b>Q - What do you think about the option of marking those you complete/plan to complete?</b></p> <p><b>Q – Would you want others to see what recommendations you carry out?</b></p>	<p>[Facilitator to use slides]</p> <p>[Slide 14-15]</p> <p>[Facilitator to record discussion points relevant to questions]</p>



	<b>Q – How could the recommendations be improved for this building?</b>	
--	---	--

Topics: App journey: statistics		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator:</i> Another menu option is statistics – here you will see data as you might expect! The menu option will show information relating to the Indoor Environmental Quality feedback being collected in the building, otherwise known as the pulse voting buttons.</p> <p><i>**click to next slide**</i></p> <p><i>Facilitator:</i> Currently the app developers are trying to find a way to link the data being collected from all the monitoring sensors in the building to show this information in a visual and easily understandable way.</p> <p><i>Facilitator to encourage discussion around following questions:</i></p> <p><b>Q – What data do you deem to be the most important to be included in this section of the tool?</b></p> <p><b>Q – Do you think you would use this menu option, if so to see what?</b></p>	<p><i>[Facilitator to use slides]</i></p> <p><i>[Slide 16-17]</i></p> <p><i>[Facilitator to record discussion points relevant to questions]</i></p>

Topics: App journey: ranking		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator:</i> The ranking section is still under refinement currently, however it is envisaged that this will contain the dashboard elements of our eTEACHER tools – a simplified summary of key information relevant to the building relating to energy and comfort. It will be the main menu option for the gamified elements of the app – so missions etc. A lot of what was described in FF2. The app developers have indicated that the name of the menu option is likely to change also.</p>	<p><i>[Facilitator to use slides]</i></p> <p><i>[Slide 18]</i></p> <p><i>[Facilitator to record discussion points relevant to questions]</i></p>

	<p><i>Facilitator to encourage discussion around following questions:</i></p> <p><b>Q – would you be interested in the information presented in this section?</b></p> <p><b>Q – if you had to rename it, what do you think would work best?</b></p>	
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Topics: App journey: settings		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator:</i> The settings menu option will give users the opportunity to change the language, if desired, which will include English, German, Romanian and Spanish. Users can also change their password for logging in to the app. Finally users can use this menu option to add additional rooms to their profile, so not just building level information will appear. This will be done in the app using a QR scanner function.</p> <p><b>**click for additional text box**</b></p> <p><i>Facilitator to encourage discussion around following questions:</i></p> <p><b>So that is our app prototype journey for today, we welcome your thoughts on the prototype.</b></p> <p><b>Q - Do you like it?</b></p> <p><b>Q - Do you think something is missing?</b></p> <p><b>Q - Can you see yourself using it, if so why, or why not?</b></p>	<p><i>[Facilitator to use slides]</i></p> <p><i>[Slide 19]</i></p> <p><i>[Facilitator to record discussion points relevant to questions]</i></p>

Topics: eTEACHER Rollout		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator:</i> So now that you have a feel for what the eTEACHER tool might look like and include, we want to</p>	<p><i>[Facilitator to use slides]</i></p> <p><i>[Slide 20]</i></p>



	<p>know your views on how we should implement the tool in this building.</p> <p><i>Facilitator to encourage discussion around following questions:</i></p> <p><b>Q - How do you think it should be roll-out?</b></p> <p><b>Q - What do you feel is the best way to let building users know the tool is live?</b></p> <p><b>Q - Should there be specific events or help – training session, an eTEACHER tool champion?</b></p>	<i>[Facilitator to record discussion points relevant to questions]</i>
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Topics: Your responses		
Timing	Guideline questions	Facilitator notes
2 minutes	<p><i>Facilitator:</i> On behalf of the whole eTEACHER project we would like to thank you for all of your contributions today – as we said at the start your input is valuable to the project particularly in these final stages of the app design. All of your feedback today around your initial impressions and thoughts on the app prototype will be fed back to the app developers. Similarly the information you have given regarding how best to rollout the final tool in the building will be fed back to the project team.</p> <p>Before we finish today, we would like to give you some information regarding one of our next important steps in the project as well as a quick update on the IEQ monitoring.</p>	<p><i>[Facilitator to use slides]</i></p> <p>[Slide 21]</p>

Topics: Building User Questionnaire		
Timing	Guideline questions	Facilitator notes
2 minutes	<p><i>Facilitator:</i> A vital part of our project is being able to evaluate the impact our tool has in each building.</p> <p>To do this, we want to look at more than just energy data, we want to understand the users of each building and hear from them about the use of energy in the building</p>	<p><i>[Facilitator to use slides]</i></p> <p>[Slide 22]</p>


	<p>before (and subsequently after) the eTEACHER tool. The questionnaire focuses on your comfort in the building and the use of energy in the building. It asks you to specify which building you use and in what capacity (staff, resident etc.) and your age bracket but no other personal information is disclosed.</p> <p>We have developed a short online questionnaire which we would appreciate if you could complete, and encourage others in the building to as well!</p> <p><i>Facilitator to encourage discussion around following questions:</i></p> <p><b>Q - Would you prefer a link is emailed out to you regarding the survey, or would you prefer a paper format questionnaire?</b></p> <p><b>Q - Is there any suggestions that you have about getting as many building users to complete the survey as possible?</b></p>	<i>[Facilitator to record discussion points relevant to questions]</i>
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Topics: Pulse update		
Timing	Guideline questions	Facilitator notes
5 minutes	<p><i>Facilitator:</i> We would also like to take this opportunity to remind you that our indoor environmental quality monitoring system is now in place within the building – please do let us know how you feel about the comfort level in the building by voting using the smiley face buttons or using the website (accessed via the QR codes). And please do encourage others to vote – remember you can vote as often as you like as this helps us track the level of satisfaction in relation to our monitoring data (temperature, humidity etc.) and we can access what the best comfort levels are in the building.</p> <p><i>Facilitator to remind participants about the Pulse system and encourage participants to keep using the system:</i></p>	<p>[Facilitator to use script provided on slides if required]</p> <p>[Slides 23 – 24]</p> <p><i>[Facilitator to record discussion points relevant to questions]</i></p>

	<p><i>Facilitator to provide update on use of system so far. [This needs to be completed by pilot coordinators]</i></p> <p><b>**Discussion prompt**</b></p> <p><b><i>Q- Have many of you used these buttons?</i></b></p> <p><b><i>Q- Have you used the online version? If not, what is hindering your use of the system?</i></b></p>	
--	--	--

Consolidation and close		
Timing	Guideline questions	Facilitator notes
2 minutes	<p><i>Facilitator thanks participants for their contributions and highlights anything of particular interest that came up during the session.</i></p> <p><i>Facilitator reiterates anonymity and what the findings will be used for.</i></p> <p><i>Facilitator asks respondents if there is anything that they would like to ask.</i></p> <p><i>Facilitator highlights participants' opportunities to keep up to date/stay in touch with project, slide 26.</i></p>	<p>Record any notes of questions raised.</p> <p>[Slides 25-27]</p>


## 7.2 Feedback Forum 3 Presentation Slides



**eTEACHER**  
Empowering Energy Education

End-user Tools to Empower and raise  
Awareness of behavioural **CH**ange  
towards **En**eRgy efficiency

Innovation Action – GA n°768738

 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 768738



Welcome to the 3<sup>rd</sup>  
eTEACHER  
Feedback Forum





## The project



eTEACHER is a 3 year EU Horizon 2020 project (Oct 2017 – Sept 2020)

The eTEACHER solution aims to help building users feel more comfortable in their environment, be it their home, workplace or medical centre.

eTEACHER involves

12  
PILOTS

3  
EUROPEAN COUNTRIES

5,000  
PEOPLE INVOLVED

3  
CLIMATIC AREAS

eTEACHER IS DEMONSTRATED IN...



**SPAIN**  
 2 HEALTHCARE CENTRES  
 2 SCHOOLS  
 1 RESIDENTIAL BUILDING  
 1 OFFICE



**UNITED KINGDOM**  
 1 SCHOOL  
 1 OFFICE



**ROMANIA**  
 4 RESIDENTIAL BUILDINGS




## Your voice



Your input, opinions and feedback are vital for the project. We want to ensure that the eTEACHER tool meets your needs, the buildings needs and is something that you will want to use.

Remember there is no right or wrong answers in these meetings – we are really just wanting to hear the honest opinions of building users.




## Today's session

Today we would like to collect feedback about the initial prototype of our ICT-based tool. To do this we would like you to contribute to discussion around some of the key features currently part of the app prototype.

The format of today's session will predominantly discussion based, with us presenting you with screenshots and information on features and asking for your honest opinion and feedback.

Also we would also like to use todays session to give you an update on the project and some of our next important steps!




## eTEACHER update

We are coming up to the end of our 2<sup>nd</sup> year on eTEACHER!

We had a successful EU Commission review meeting at the start of the summer

Over the past year we have been focused on installing various monitoring devices into the 12 pilot buildings and developing our eTEACHER tool (with valuable input from previous FF sessions).

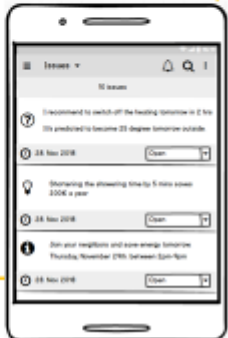




## eTEACHER app

The app has been under development during our 2<sup>nd</sup> year of the project and today shall involve us showing you an early prototype to collect your initial thoughts and feedback!



So we welcome all comments and feedback today!






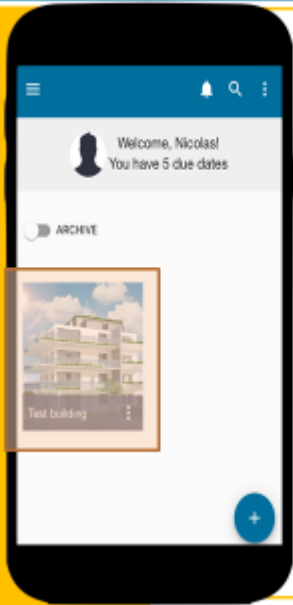
## App journey - log in

### Welcome to the eTEACHER app prototype




## App journey - welcome screen



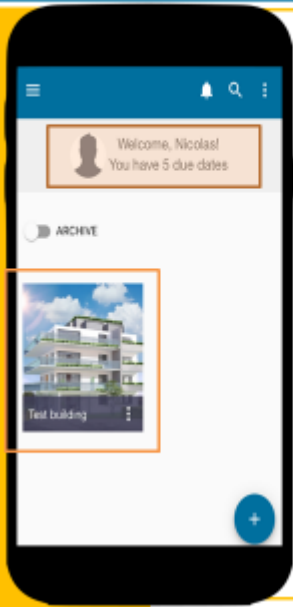
Once you log in to the eTEACHER app you are greeted by a screen similar to this (albeit the final version will be more populated)

The screen includes;

- Option for you to select your own building




## App journey - welcome screen



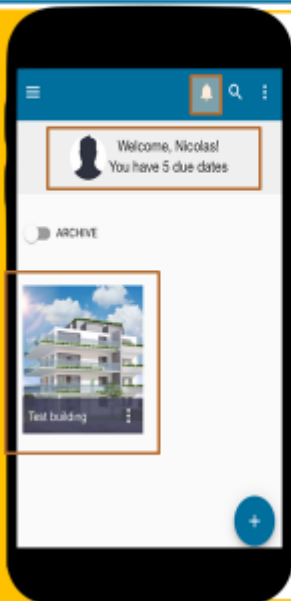
Once you log in to the eTEACHER app you are greeted by a screen similar to this (albeit the final version will be more populated)

The screen includes;

- Option for you to select your own building
- It includes a welcome banner with a summary of "active" engagement with the tool – hints or missions




## App journey - welcome screen



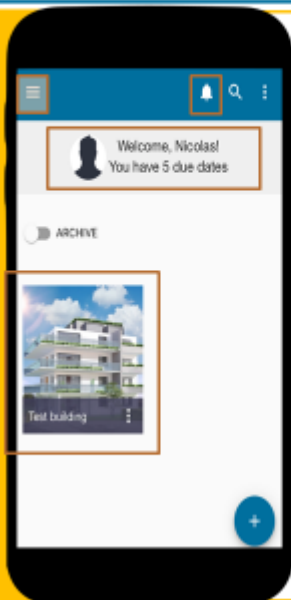
Once you log in to the eTEACHER app you are greeted by a screen similar to this (albeit the final version will be more populated)

The screen includes;

- Option for you to select your own building
- It includes a welcome banner with a summary of "active" engagement with the tool – hints or missions
- A notification bell can be clicked to see active notifications in the app



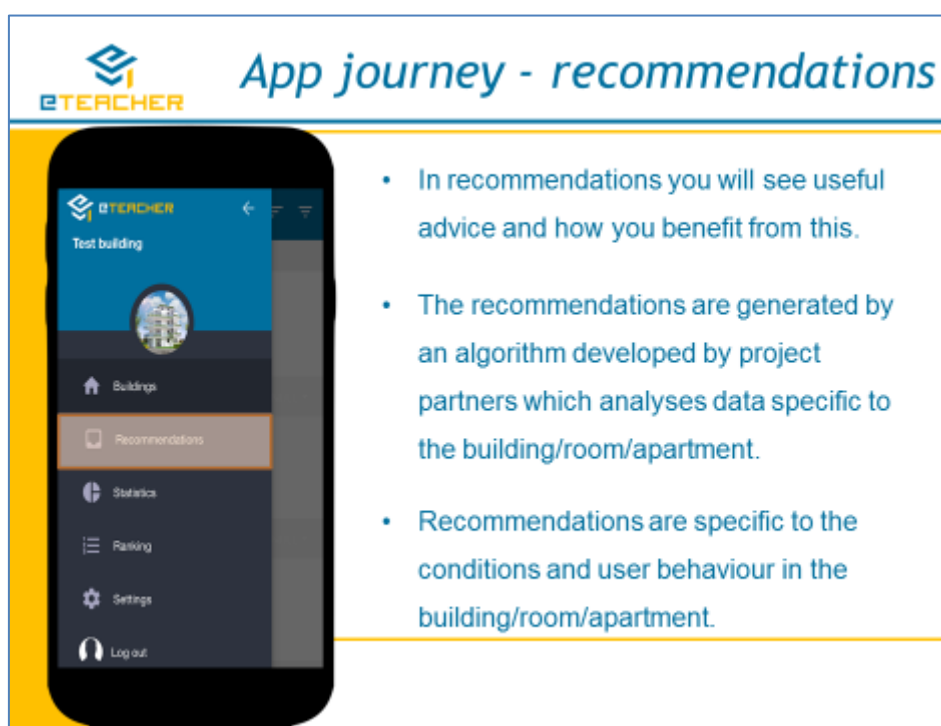
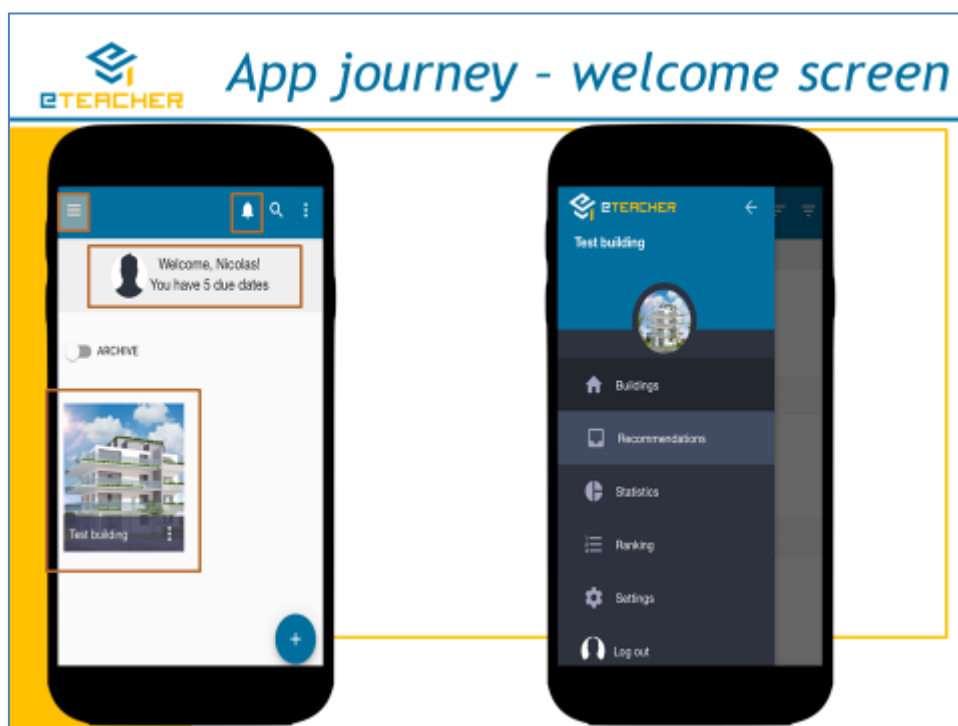
## App journey - welcome screen

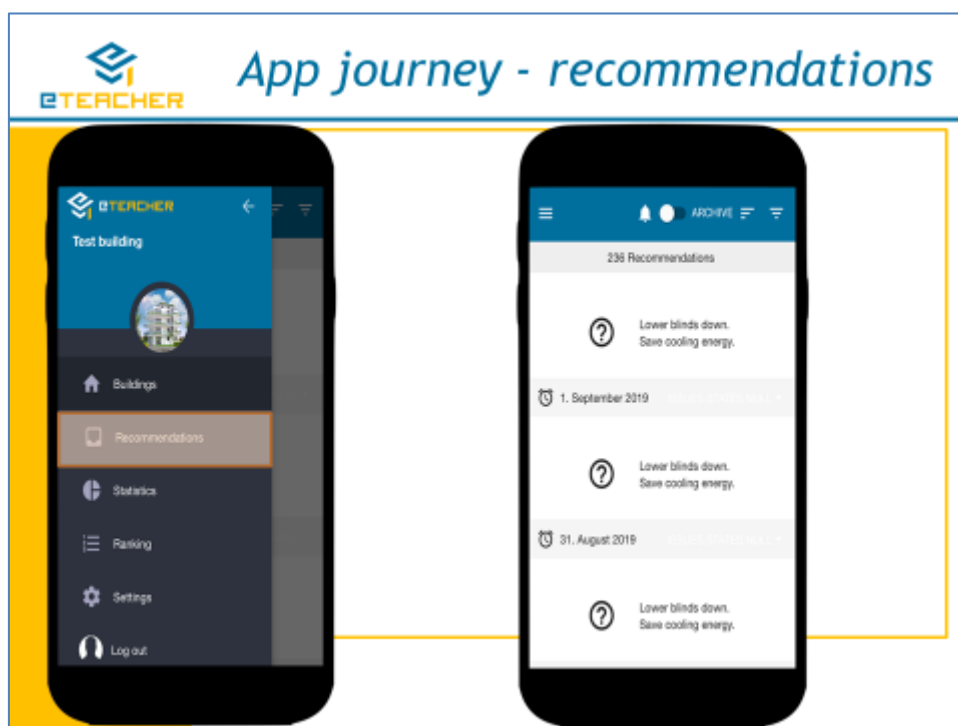


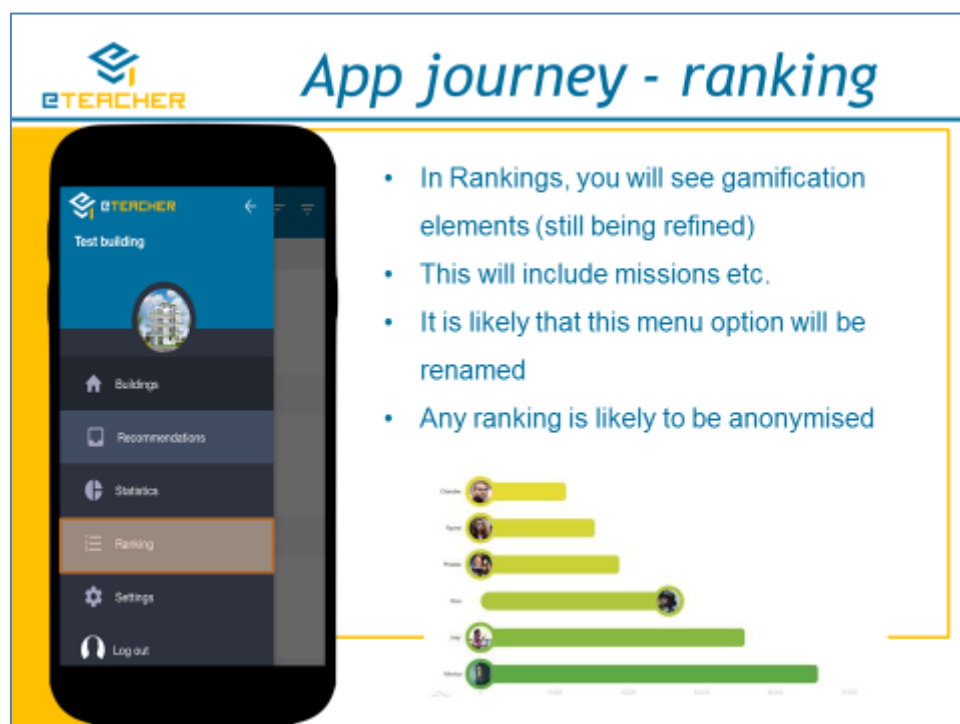
Once you log in to the eTEACHER app you are greeted by a screen similar to this (albeit the final version will be more populated)


The screen includes;

- Option for you to select your own building
- It includes a welcome banner with a summary of "active" engagement with the tool – hints or missions
- A notification bell can be clicked to see active notifications in the app and recent activity
- There is also a menu option on the top left hand side

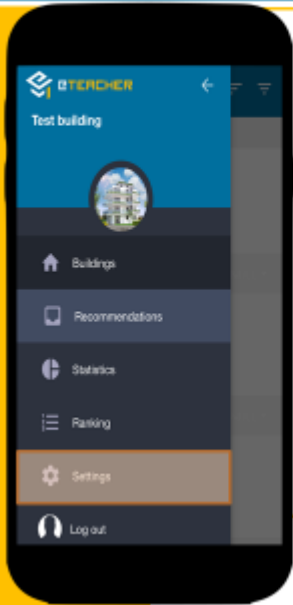









## App journey - settings



The Settings menu option will allow;

- changing the language
- changing your password
- adding rooms to your profile with a QR Scanner


**Currently that is all the functions on our first prototype, however it is still be developed and refined.**



## eTEACHER rollout

So now that you have a feel for what the eTEACHER tool might look like and include, we want to know your views on how we should implement the tool in this building.

1. How do you think it should be roll-out?
2. What do you feel is the best way to let building users know the tool is live?
3. Should there be specific events or help – training session, an eTEACHER tool champion?




## Your responses

**Thank you for contributing today!**

Your feedback will help us refine the final design of our tool.


We will be sharing your feedback on the app prototype with the app developers.

Next we would like to give you some information about important next steps for the project



## Building User Questionnaire

- A vital part of our project is being able to evaluate the impact our tool has in each building.
- To do this, we want to look at more than just energy data, we want to understand the users of each building and hear from them about the use of energy in the building before (and subsequently after) the eTEACHER tool.
- We have developed a short online questionnaire which we would appreciate if you could complete, and encourage others to as well!







## Reminder: IEQ Monitoring

The Pulse system is now up and running in this building!

Please use these buttons and encourage other building users too!







## Pulse update

***\*Insert update on use of the Pulse system in the specific pilot building\****






# Coming soon to your building!



We expect that the eTEACHER tool will be available from end of Oct!



# Thank you again!

# Any questions?



## Stay in touch



**Follow us on**

Website – [eteacher-project.eu](http://eteacher-project.eu)

Twitter - [@eteacherEU](https://twitter.com/eteacherEU) #eteacherEU

LinkedIn - [eTEACHER](https://www.linkedin.com/company/eTEACHER) - [end-users'tools to empower energy efficiency](https://www.linkedin.com/company/eTEACHER)



**Contact us**

[coordinator@eteacher-project.eu](mailto:coordinator@eteacher-project.eu)

[communication@eteacher-project.eu](mailto:communication@eteacher-project.eu)






**Empowering Energy Education**

## THANK YOU

End-user Tools to Empower and raise  
Awareness of behavioural **CH**ange  
towards **En**eRgy efficiency

Innovation Action - GA n°768738



### 7.3 Feedback Forum 3 Reporting Template

A report for each Feedback Forum should be prepared by the facilitators and sent to DMU to ensure that the findings can be collated and disseminated with the relevant project stakeholders. The report should be sent in English with relevant quotes translated.

For consistency reasons results of each Feedback Forum should be reported in the specific format described below.

#### 1. *Date/place/time that the Feedback Forum took place and number of participants*

Feedback Forum #	
eTEACHER pilot building	
Country	
Dates	
Number of participants	

#### 2. *Short description of arranging Feedback Forum*

Briefly describe: How where the participants informed about the feedback forum? Was it difficult for participants to attend the feedback forum? Any other problems with feedback forum?

Comments

#### 3. *Executive Summary*

Write the main conclusions/recommendations resulting from the feedback forum. Detailed responses for specific topics covered in the Feedback Forum are addressed in Section 4 – this is for the key take home messages.

Comments

#### 4. *Summary of each Feedback Forum discussion point (as identified in Facilitators Guide)*

Quote the most repeated but also meaningful responses and write a short summary of the discussion made for each of the topics covered in the Feedback Forum.



Give the responses in “quotes” as uttered by the users and in bullets (bullet point list, one bullet per comment). Provide also the number of participants who expressed the same thoughts.

Where you find it necessary you can also quote a response that was an exception to show a different minority opinion or highlight an interesting idea. In this case, you should state that it is the response of only one participant.

**Discussion: App journey – log in screen**

*Record notes on discussion points from the app journey log-in screen*

Does having to sign in to the app put you off using it?

Do you feel more secure using the app, knowing it requires a login to access it?

**Discussion: App journey – welcome screen**

*Record notes on discussion points from the app welcome screen*

What are your initial thoughts on having to select the building upon log-in?

What would you prefer to see upon log-in (if anything different)?

**Discussion: App journey – RECOMMENDATIONS**

*Record notes on discussion points from the Recommendations slide*

Do you think recommendations is the best name for this menu option?

Would you prefer separate menu options for hints/recommendations and missions?

Do you think you will use the recommendations menu option?

What do you think about the option of marking those you complete/plan to complete?

Would you want others to see what recommendations you carry out?

How could the recommendations be improved for this building?

**Discussion: App journey – STATISTICS**



*Record notes on discussion points from the Statistics slide*

What data do you deem to be the most important to be included in this section of the tool?

Do you think you would use this menu option, if so to see what?

#### Discussion: App journey - RANKING

*Record notes on discussion points from the eTEACHER roll-out slide*

Would you be interested in the information presented in this section?

If you had to rename it, what do you think would work best?

#### Discussion: App journey - SETTINGS

*Record notes on discussion points from the Settings slide*

Initial impressions of the app?

Is something missing?

Can you see yourself using it, if so why, or why not?

### Discussion: eTEACHER roll-out

*Record notes on discussion points from the eTEACHER roll-out slide*

How do you think it should be roll-out?

What do you feel is the best way to let building users know the tool is live?

Should there be specific events or help – training session, an eTEACHER tool champion?

### Discussion: Building User Questionnaire





*Record notes on each of the discussion points from the building user questionnaire slide*

Would you prefer a link emailed out to you regarding the survey, or would you prefer a paper format questionnaire?

Is there any suggestions that you have about getting as many building users to complete the survey as possible?

#### Discussion: Pulse system

*Record notes on any discussion relating to the use of the Pulse system so far.*

Have many of you used these buttons?

Have you used the online version? If not, what is hindering your use of the system?

#### Consolidation and close

*Record any notes of questions raised.*

**Please ensure that you capture the discussions in as much detail as possible. Please aim to collect quotes from participants if possible.**



## 8 Appendix 8 – Feedback Forum 2 Summary Report

### Disclaimer

*The information reflects only the author's view and the Commission is not responsible for any use that may be made of the information it contains.*

### Technical References

Project Acronym	eTEACHER
Project Title	end-user Tools to Empower and raise Awareness of Behavioural Change towards EneRgy efficiency
Project Coordinator	Noemi Jimenez CEMOSA noemi.jimenez@cemosa.es
Project Duration	1 October 2017 – 30 September 2020

### Versions

Version	Person	Partner	Date
1	Ashley Morton	DMU	27 Sept 2019



## 0 Executive Summary

A tailored approach to the *Enabling Change* framework was developed for eTEACHER, presented in D1.4 (Reeves, Morton & Bull, 2018). The tailored approach developed in WP1 included the use of “Feedback Forums”. For eTEACHER the use of Feedback Forums addresses the need for a project “brains trust” within the Enabling Change framework, here a group of key building stakeholders and actors which could provide feedback on key ideas and concepts for the development of the eTEACHER tool. This report provides a summary of the outcomes of Feedback Forum 2.

A total of 9 Feedback Forum sessions were held, covering a total of all 12 eTEACHER pilot buildings in the UK, Spain and Romania. Building user feedback data was collected from 49 participants, however the analysis presented in this report is based on the results of 48 participants. Feedback Forum 2 was designed to continue encouraging engagement with key building users throughout the development stage of the eTEACHER ICT tool, as well as a key data collection point relating to the app design and gamification elements being worked on in other work packages. It therefore collected constructive feedback relating to the eTEACHER tool development, in particular around the gamification elements, hints and missions. Feedback Forum 2 assessed what users would include in their “ideal” eTEACHER tool, what functions they deemed to be important and of interest to them, what “hints” they would find useful, their “ideal” hint, what “missions” they would likely take part in and what an “ideal mission” might include.

The findings from Feedback Forum 2 indicate that building users would like the eTEACHER tool to include more informative options, with their “ideal” tool including indoor temperatures, indoor environmental quality scores, energy information and data, energy hints and tips, pulse (IEQ) voting and energy comparisons. Overall energy information and data was ranked the highest importance with 89% of participants ranking it very important or important. Other options which ranked high (combined votes of very important and important) were energy hints and tips (88%), building specific profiles (86%) and reporting function (84%). Indicating a preference for a practical informative tool, which is still visually engaging (following interest shown in gamification elements and ways to visualise energy use). However, Social networks were not seen as important by participants with many stating they would not be interested in platforms such as Facebook, Twitter or Instagram being linked to the eTEACHER tool.

It was found that participants “ideal” hints and missions both included general energy consumption, heating consumption use, lighting consumption use and cooling consumption use. The preferred format of impact or benefit from completing such hints or missions was reported as being energy savings (kWh), cost savings (£/€) and the equivalent trees planted (emissions savings). Missions were preferred to be on a weekly basis and last the week, with a roughly equal split between preference for individual missions and building level missions.

The findings from Feedback Forum 2 supports many of the earlier WP1 findings, but has also allowed for more specific building related preferences to be uncovered. These building specific results shall allow other work packages to tailor the recommendations and advice given to the tool users specific to their building.

The Feedback Forums were seen again as a benefit for building users, giving them the opportunity to ask questions and to gain a better understanding of the project’s objectives.



## 1 Background

eTEACHER's WP1 sought to develop and propose effective ideas for a behaviour change intervention, based upon research evidence, consultation with key users of the buildings where eTEACHER will be piloted, and a pre-chosen structured framework for designing behavioural change initiatives, *Enabling Change*. A tailored approach to the *Enabling Change* framework was developed for eTEACHER, presented in D1.4 (Reeves, Morton & Bull, 2018).

*Enabling Change* is an evidence-based approach for developing and delivering behaviour change interventions, put forward by Les Robinson in the book *Changeology* (Robinson, 2012) and via articles on the Enabling Change website (Robinson, 2018). It advocates a participatory approach to project development, at both whole-programme level and with relation to specific interventions.

The tailored approach developed in WP1 included the use of "Feedback Forums". For eTEACHER the use of Feedback Forums addresses the need for a project "brains trust" within the Enabling Change framework, here a group of key building stakeholders and actors which could provide feedback on key ideas and concepts for the development of eTEACHER. The use of Feedback Forums was recommended throughout both Year 2 and Year 3 of the eTEACHER project as a means to encourage and enhance user engagement with the project and the resulting ICT based tool.

This report provides a summary of the outcomes relating to Feedback Forum 2. The report therefore consists of a background section explaining the aims and objectives of Feedback Forum 2; a section presenting the key findings from Feedback Forum 2; a section on the main conclusions gained and appendices containing many of the supporting documents produced for Feedback Forum 2 and further data analysis relating to the specific building typologies found in the eTEACHER project.

## 2 Feedback Forum Two

### 2.1 Aim for Feedback Forum Two

Feedback Forum 2 was designed to continue encouraging engagement with key building users throughout the development stage of the eTEACHER ICT tool, as well as a key data collection point relating to the app design and gamification elements being worked on in other work packages. Therefore, similar to the first Feedback Forum the session introduced or re-familiarise those key building users with the project and collected constructive feedback relating to the eTEACHER tool development, in particular around the gamification elements, hints and missions. Feedback Forum 2 would assess what users would include in their “ideal” eTEACHER tool, what functions they deem to be important and of interest to them, what “hints” they would find useful, their “ideal” hint, what “missions” they would likely take part in and what an “ideal mission” might include. Given the content being covered during this Feedback Forum the format included various “activities” for participants to undertake which would generate the results deemed of interest. These “activities” included use of stickers, handouts and facilitated discussions around key areas of interest.

### 2.2 Supporting materials

All pilot building coordinators were provided with materials for delivering each of the Feedback Forums as well as an online training session organised by DMU to go through the content of the Feedback Forum and materials being provided. The materials were designed to ensure consistency was achieved across all pilot building feedback forums. The supporting materials include;

- 11. Feedback Forum Facilitators Guide:** This document showed the suggested format of the Feedback Forum meetings including a welcome and general housekeeping items, an ice-breaker, an introduction to the session, the relevant “activity” sections (including questions, prompts and activity details) and a wrap up section. The guide also allows for detailed instructions to be given to facilitators relating to when materials are distributed and what information is deemed of importance and therefore highlights to facilitators what should be recorded/noted during the session.
- 12. Feedback Forum Presentation:** This presentation utilised the standard eTEACHER presentation slides however it was simplified for the building user audience and the relevant information relating to Feedback Forum has been added.
- 13. Feedback Forum Handouts:** These handouts allowed for the results of each activity to be recorded by each participant.
- 14. Feedback Forum Reporting Template:** This template could be used by the pilot building coordinators to report back the findings of each Feedback Forum in addition to the completed handouts.
- 15. Consent form for Feedback Forums:** As with Feedback Forum 1 a consent form was produced focusing particularly on the Feedback Forums. This was only necessary if the participants were new to the Feedback Forums.



## 2.3 Feedback Forum 2 in eTEACHER buildings

The second Feedback Forum was carried out in all of the eTEACHER pilot buildings, covering a total of 12 eTEACHER buildings in 9 separate sessions. A summary of the Feedback Forums held can be found in Table 1 below.

**Table 8 Summary of Feedback Forum 2 participation**

Country	eTEACHER pilot building	Building type	Date of FF1	Participants
United Kingdom	Council House	Office	2 <sup>nd</sup> July 2019	7 staff
United Kingdom	Djanogly	School	28 <sup>th</sup> June 2019	7 staff
Romania	InCity (A, B, C & D Building)	Residential	11 <sup>th</sup> July 2019	11 residents, staff
Spain	Villafranca	HCC	12 <sup>th</sup> July 2019	6 staff
Spain	Guareña	HCC	11 <sup>th</sup> July 2019	1 staff
Spain	OAR	Office	10 <sup>th</sup> July 2019	7 staff
Spain	Residential apartment block	Residential	22 <sup>nd</sup> July 2019	3 residents
Spain	Arco Iris Kindergarten	School	16 <sup>th</sup> July 2019	4 staff
Spain	IES Torrente High School	School	16 <sup>th</sup> July 2019	3 staff

In total 49 people participated across a total of 9 FF2 sessions, however data was only gathered from 48 participants, as the participant in the Guareña HCC said they were too busy to complete the activities and would pass on the completed handouts at a later date (which unfortunately has not happened).

## 2.4 Key Data Collection areas

As previously mentioned, the main focus for this Feedback Forum was on users' preferences around the eTEACHER tool functionalities and gamification elements. As such, key themes were identified in which data should be collected from building users, relating to the specific areas.

The main themes were then addressed through the design of five different "activities" for participants to complete;

6. The "ideal" app – initial thoughts and impressions of Pulse system buttons
7. Importance of various app functions – users were asked to indicate how important specific functions were to them
8. eTEACHER "hints" – users were asked to rank various "hints" by how useful they were for them, and then asked to identify their "ideal" hint design
9. Interest of various app functions, gamification elements and visualisations – users ranked their interest of the suggested options given
10. Gamification element "missions" – users were asked to rank various "missions" by whether they would take part or not, and then asked to identify their "ideal" mission design

In addition to this, each of the pilot coordinators was asked to report on the logistics and organisation required for facilitating these Feedback Forums, as a means to improve, support and further mentor project partners.

### 3 Feedback Forum 2 Findings

This section presents the key findings from all the Feedback Forum 2 sessions. Each activity is discussed with the relevant results presented. Additional results, typically split into building typologies is included in the Appendices, the relevant appendix for each activity are highlighted in each section.

#### 3.1 Building Users' preferences on app functions – their “ideal” eTEACHER tool

As part of an ice breaker exercise for the Feedback Forum the participants were presented with an empty mobile phone diagram. Participants were given a sheet of stickers representing 16 different function options. There were also “Create Your Own” sticker options given where participants could write down an app function which was not in the 16 options given. Participants were instructed to “design the ideal eTEACHER tool” that they considered to meet both their needs and the building needs. Participants were told they could use as many or as few of the stickers as they needed, but to include everything they thought the eTEACHER tool must include.

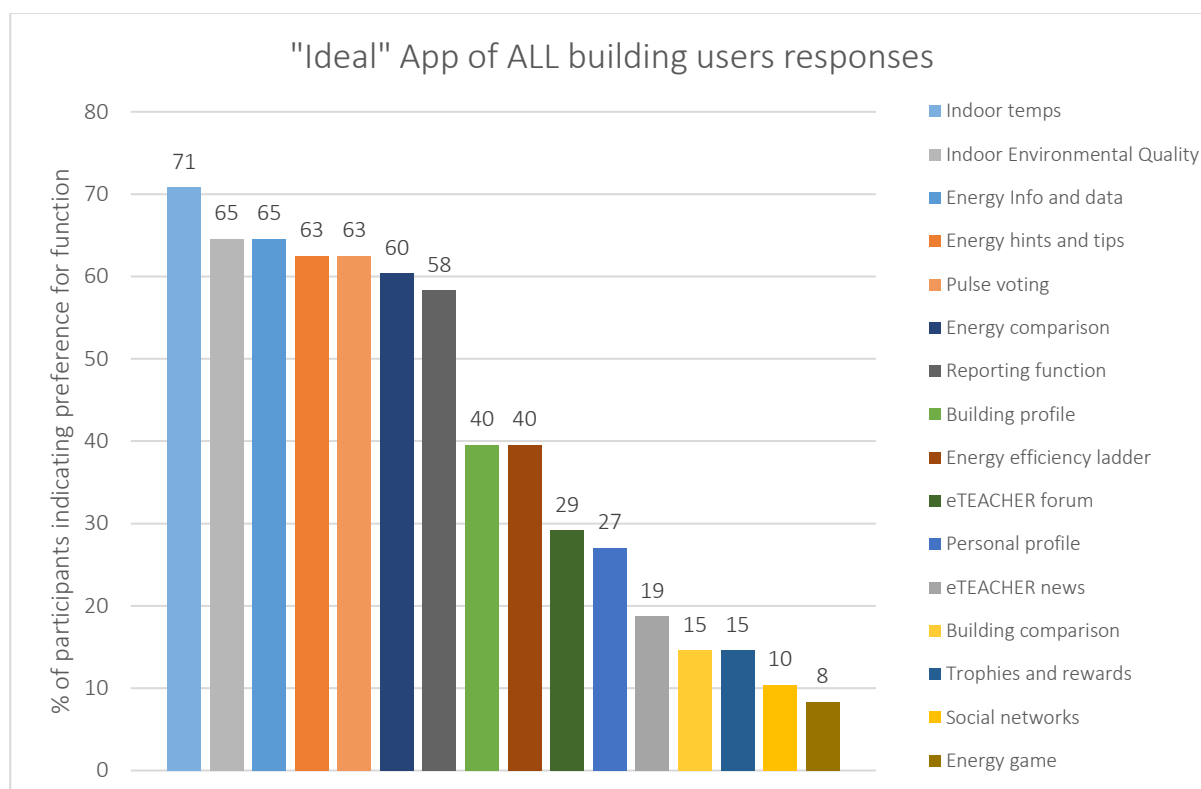
The function options given to participants included the following:

- Energy information and data – see recorded energy use data
- Energy hints and tips – get recommendations to save energy, improve comfort etc.
- eTEACHER news – keep up-to-date with project developments
- Social networks – share eTEACHER related posts on your social media
- Personal profile – tailor the app to your own preferences
- Building profile – get information relating to the whole building, not just your own room or apartment
- Trophies and rewards – collect tokens for completing energy saving actions
- Energy efficiency ladder – move up the ladder with energy saving actions
- Reporting function – log any issues with FM and receive feedback
- Energy game – interactive game around saving energy
- Energy comparison – see energy use weekly and monthly comparison
- eTEACHER forum – share tips with other building users
- Indoor temperatures – date on the internal temperatures in the building
- Pulse voting – vote on your comfort levels
- Indoor Environmental Quality – see how the building scores today
- Building comparison – compare your building's energy efficiency with other eTEACHER buildings

The results from all buildings were compiled to see what percentage of the building users' selected each of the options given in their “ideal” app. Figure 1 shows the results from the most popular functionalities to the least popular. There was a clear preference for 7 of the function options given, with these being selected by over 50% of participants. The most popular function was indoor temperatures with 71% of participants including this on their mobile interface. Participants indicated a preference for more informative options to be included in their “ideal” tool with indoor temperatures, indoor environmental quality scores, energy information and data, energy hints and tips, pulse (IEQ) voting and energy comparisons being the top selected options. The last remaining option of the top 7 was the reporting function, suggesting that users' do not just



want the information surrounding energy use in their building but they also want to have the opportunity to then report any issues with the relevant staff/FM/management.



**Figure 5 Building users' preferences for "ideal" eTEACHER tool functionalities**

The least popular option was the energy game with 8% of participants selecting it, this supports earlier WP1 findings from Workshop Ask (D1.3 - Preston, 2018). Social networks (10%), trophies and rewards (15%) and an eTEACHER building comparison (15%) were also deemed to be unpopular options to include in the "ideal" app for building participants.

The preferences for app functionalities was also analysed by building typologies, focusing on the participant responses relevant to; residential buildings, office buildings, school buildings and health care centre buildings (HCC). These results can be found in Appendix 5. Within residential buildings the top three tool functions included; Indoor temperatures (64%), Indoor Environmental Quality information (57%) and Energy information and data (57%). In office buildings the top four selected options included; Indoor Environmental Quality information (100%), Reporting function (86%), Energy comparison (86%) and Indoor temperatures (86%). In School buildings the top selected options included; Energy information and data (64%), Energy comparison (64%) and then four options were selected by 57% of school participants; energy hints and tips, energy efficiency ladder, indoor temperatures and pulse voting. In the HCC the top selected options included; Energy hints and tips (100%), Indoor temperatures (83%), Reporting function (67%) and Pulse voting (67%). As it can be seen from this analysis indoor temperatures appears in the top choice across all building types, as well as some form of energy information (whether that is energy information and data, energy comparison or energy hints and tips).

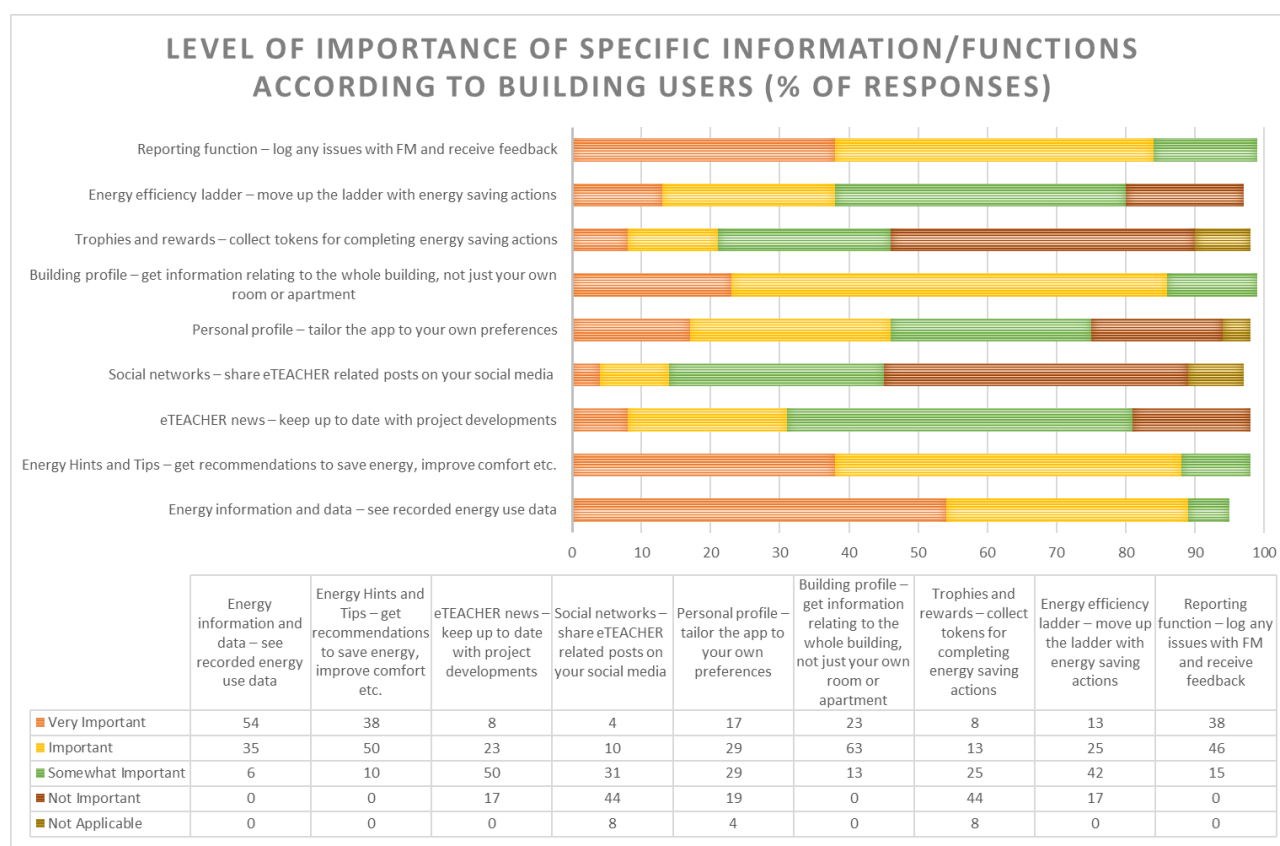


### 3.2 Building users' perception of importance relating to specific app information/functions

To further investigate building users' preferences on app functionalities, Activity 2 involved participants indicating their opinion regarding the importance of specific app functions. A list of 9 app functionalities were given to participants and they had to rank the importance of that option to them using a 5 point scale; very important, important, somewhat important, not important or not applicable. A 9 function sub-sample was chosen to keep the task from seeming over excessive if participants were asked to rank all 16 of the examples used in Activity 1.

From combining all of the rankings from all participants it is clear to identify the app functions which users deem to be the most important. Figure 2 highlights the findings from the activity. Overall energy information and data was ranked the highest importance with 54% of participants ranking it very important. When this was combined with the rankings of important, it came out with 89% of participants selecting it as very important or important. The other options which ranked high (combined votes of very important and important) were energy hints and tips (88%), building specific profiles (86%) and reporting function (84%). Therefore, supporting the findings from Activity 1. Those deemed of less importance were social networks and trophies/rewards, both options had 44% of participants rating them as not important.

The level of importance ranking for each option by building typology can be found in Appendix 6.



**Figure 6 All participants ratings of importance of specific app functionalities**

### 3.3 Building users' preferences/interest in app information options

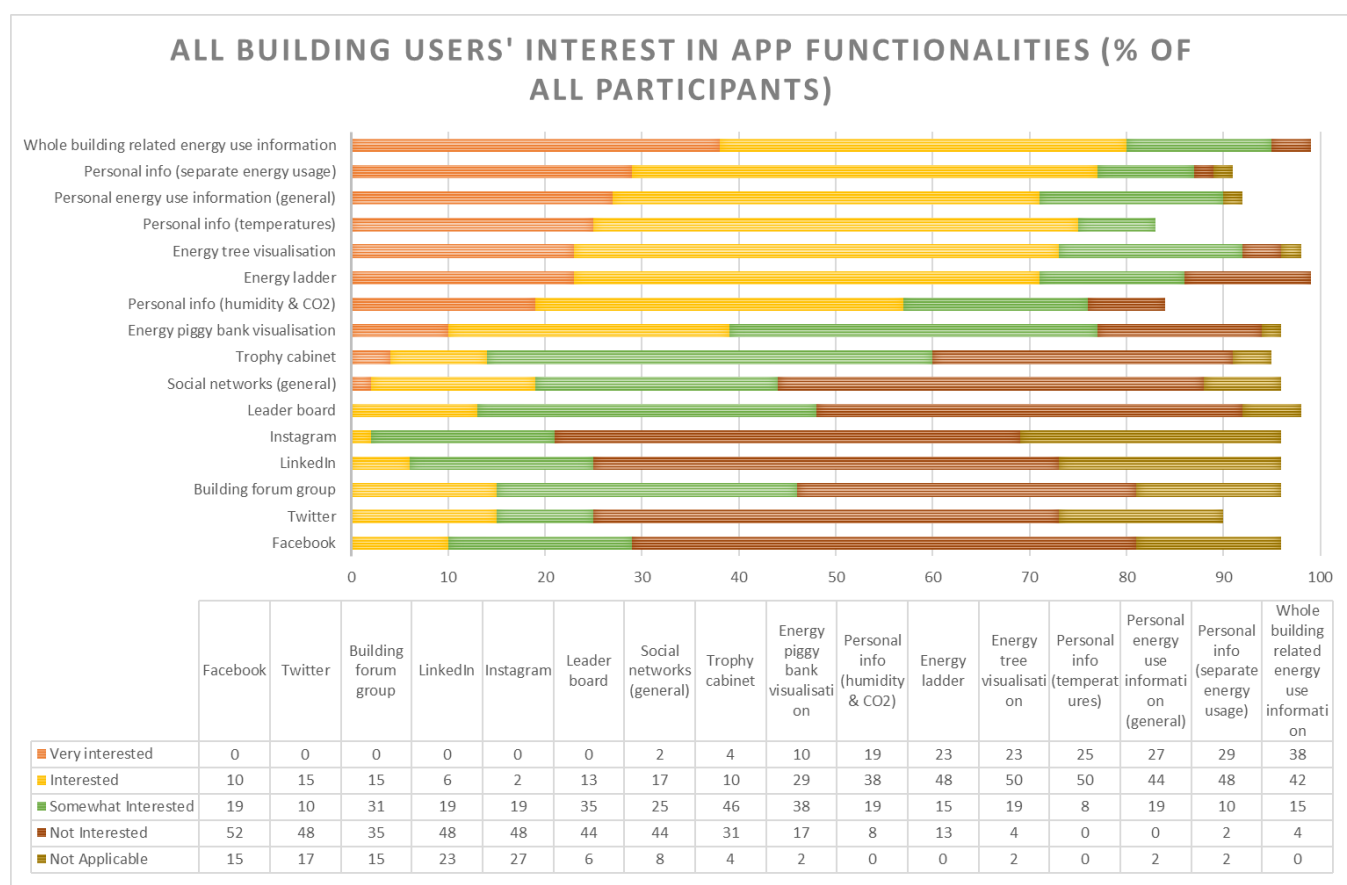
To further support and expand on the findings from Activity 1 and 2, Activity 4 required participants to indicate their interest in specific app functionalities. Although similar examples were used to those in Activity 1 and 2, some of these were expanded to find out more specific preferences. For example, participants interest in social networks being included was asked, however it was also then split into specific social media examples, including Facebook, Twitter, LinkedIn and Instagram. Participants were given a list of 16 examples and asked to rank them on a 5 point scale including; very interested, interested, somewhat interested, not interested and not applicable. The options given to participants included;

1. Energy ladder – this shows you your improvement in energy efficiency based on your actions carried out in the building. If you achieved energy savings, you would move up the ladder like going up levels in a game
2. Personal energy use information – graphs of individual room or apartment use.
  - 2.1 If this includes separate energy usage – lighting, heating etc. temperatures, humidity levels etc. Please indicate what energy related information would be most interesting
  - 2.2 If this includes temperatures
  - 2.3 If this includes humidity levels and CO2 levels
3. Whole building related energy use information – graphs of whole building level consumption
4. Social networks – share eTEACHER related posts on various social platforms
  - 4.1 If this included Facebook
  - 4.2 If this included Twitter
  - 4.3 If this included a building specific forum group
  - 4.4 If this included LinkedIn
  - 4.5 If this included Instagram
5. The energy tree – a visualisation tool which shows you how energy efficient you are being – the more energy you save the more the tree grows and flourishes
6. Leader board – compete against other building users to save the most. You would be able to relate your own actions to others and see how energy efficient you are in comparison to others.
7. Energy piggy bank – carry out energy saving actions and get rewarded with energy coins which you can save in your own energy piggy bank. Another possible way for you to see how you are doing relating to energy efficiency measures
8. Trophy cabinet – a function in the app which displays all the rewards you achieve from carrying out various energy conservation actions in one place.

Figure 3 shows the results from Activity 4, with the options with the greatest level of interest being indicated being at the top of the graph. As can be seen the option with the highest level of interest for participants was the whole building related energy use information. Showing a keen desire in building users to have access to energy related/building specific information via the eTEACHER tool. There was also some interest shown in gamification elements and ways to visualise energy use, in particular any related savings from behaviour change, showing that building users do not just want an information based tool and would like something more engaging. The two examples which seemed to interest participants the most was the energy tree visualisation (73% combined very interested and interested) and the energy ladder (71% combined very interested and interested). Therefore showing that participants would like to see what impact they are having



by using the eTEACHER tool in a more visual format and not simply “you have saved X amount of energy”. Participants were asked about their preferences in any impact being reported in Activity 3 and 5 and these results are discussed in latter sections.



**Figure 7 Interest in app functionalities based on all participant responses**

From Figure 3 it can also be seen that the options which did not interest participants was again social networks (44% stating not interested in the general concept). Of the different social network examples given, Facebook scored the highest level of disinterest with 52% of participants stating they were not interested and 15% stating it was not applicable. However, the remaining social network examples also scored similarly; Twitter had 48% not interested and 17% not applicable, Instagram had 48% not interested and 27% not applicable, LinkedIn had 48% not interested and 23% not applicable and finally a building forum group had 35% not interested and 15% not applicable.

The interest in each option was also analysed by building typology and these results can be found in Appendix 7.

### 3.4 Useful “hints” according to building users

One of the key features of the eTEACHER tool will be giving energy related hints and advice to users as it was always proposed to be an advisor tool to building users. Therefore it was important during Feedback Forum 2 that an understanding was achieved on what sort of hints would be useful to participants and therefore those which building users may well take action from to change existing behaviours. Activity 3 focused on this area, with use of two separate parts. The first part gave participants a list of example hints and asked them to indicate whether they deemed the hint to be useful or not (yes thumbs up, neutral, no thumbs down). The second part is discussed in Section 3.5.

The list of example hints given to participants included;

- “turning off your thermostat while you’re not home can save you 15% on your energy bill”
- “shortening your shower time by 5 minutes can save you about £/€ 200 a year”
- “open windows instead of relying on an extractor fan – no electricity used, no cost!”
- “turn appliances off at the plug to save an average of £/€ 30 a year”
- “turning your thermostat down by just 1°C can save you as much as £/€ 75 per year!”
- “switching your light bulbs from incandescent to LEDs can reduce up to 1300 pounds of carbon dioxide over the life of the bulb!”
- “90% of a washing machine's energy expenditure is spent heating the water, so if you wash your clothes at 30-40°C you're saving a significant amount of money”
- “switching your old gas/oil boiler for an electric model could save a third of your fuel costs”
- “by keeping cool during the day, and warming up with blankets and sweaters, you can significantly reduce your carbon footprint”

Obviously some of these examples are more suited to specific building types, and the analysis relating to usefulness of hints by building typologies can be found in Appendix 8.

In general most of the example hints were regarded useful, Figure 4 shows the results from the % of all participants responding. The top rating examples included;

- “turn appliances off at the plug to save an average of £/€ 30 a year” (81% voted yes this is useful)
- “switching your light bulbs from incandescent to LEDs can reduce up to 1300 pounds of carbon dioxide over the life of the bulb!” (75% voted yes this is useful)
- “turning your thermostat down by just 1°C can save you as much as £/€ 75 per year!” (75% voted yes this is useful)
- “turning off your thermostat while you’re not home can save you 15% on your energy bill” (75% voted yes this is useful)

The hints deemed least useful were;

- “shortening your shower time by 5 minutes can save you about £/€ 200 a year” (42% voted this is not useful)
- “switching your old gas/oil boiler for an electric model could save a third of your fuel costs” (40% voted this is not useful)



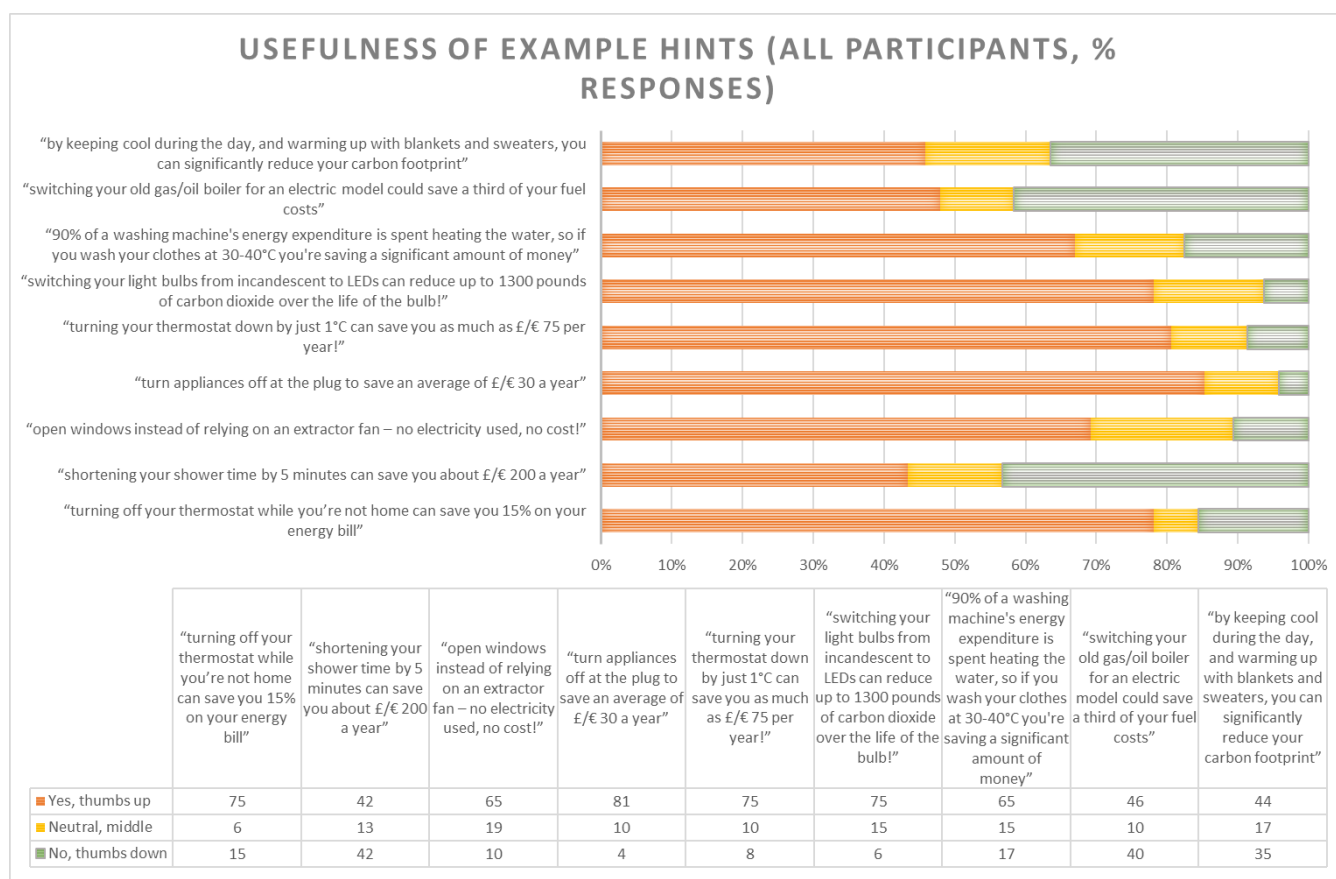


Figure 8 Usefulness of example hints given in Activity 3 Part 1

### 3.5 Ideal "hints" by pilot building preferences

The second part to Activity 3 looked at what participants considered their "ideal" hint would include. In this activity participants had a handout with various hint options including the topic of the hint, the related suggested action and the preferred format of any impact or saving relating to the hint. Participants simply had to tick any information in each category that they would find useful in the hints suggested by the eTEACHER tool. In this section the "ideal" hint based on the responses of all participants is discussed, however the preferences based on building typology are included in Appendix 9.

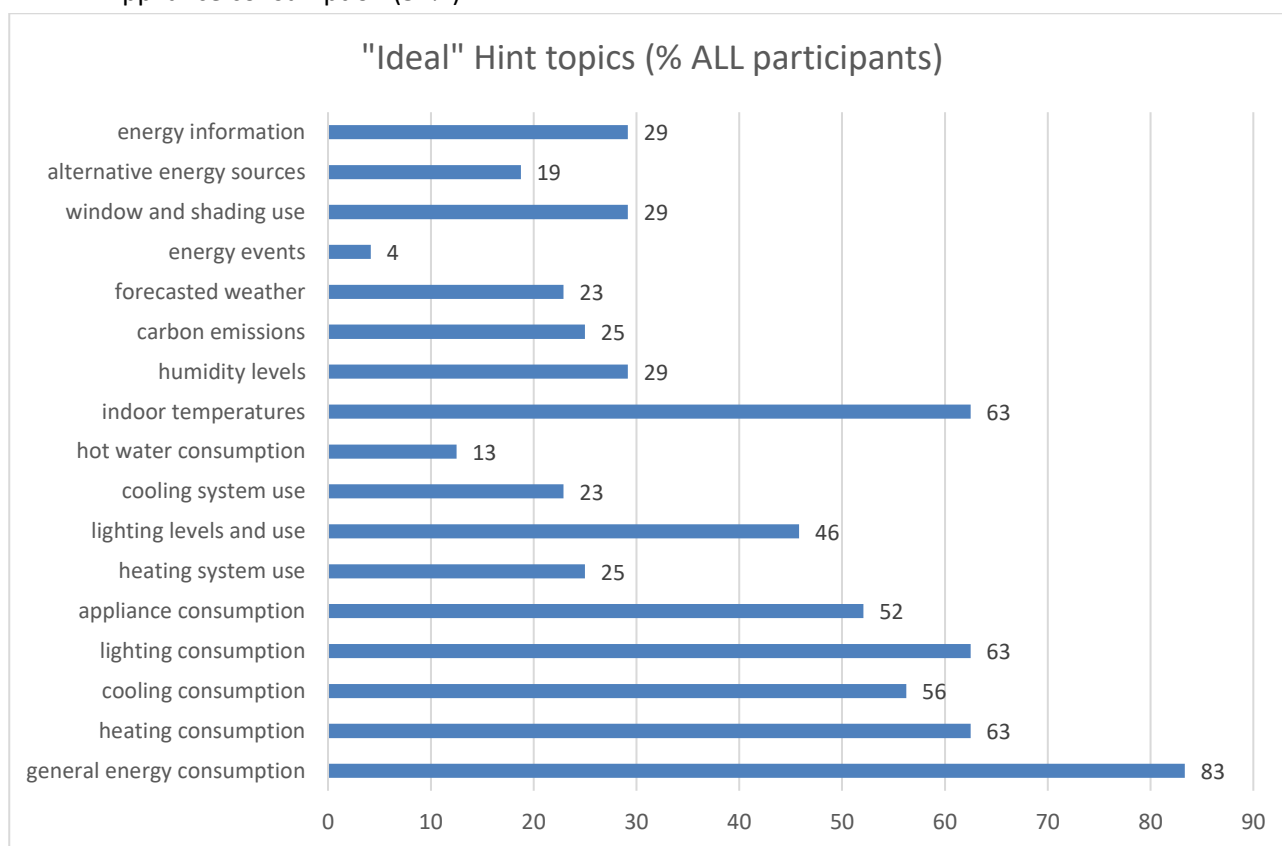
Figure 5 presented the results relating to the options given for hint topics. The options given included;

- general energy consumption
- heating consumption
- cooling consumption
- lighting consumption
- appliance consumption
- heating system use
- lighting levels and use
- cooling system use
- hot water consumption

- indoor temperatures
- humidity levels
- carbon emissions
- forecasted weather
- energy events
- window and shading use
- alternative energy sources
- energy information

The topics which were identified as being most beneficial to participants included;

- General energy consumption (83%)
- Indoor temperatures (63%)
- Heating use consumption (63%)
- Lighting use consumption (63%)
- Cooling use consumption (56%)
- Appliance consumption (52%)

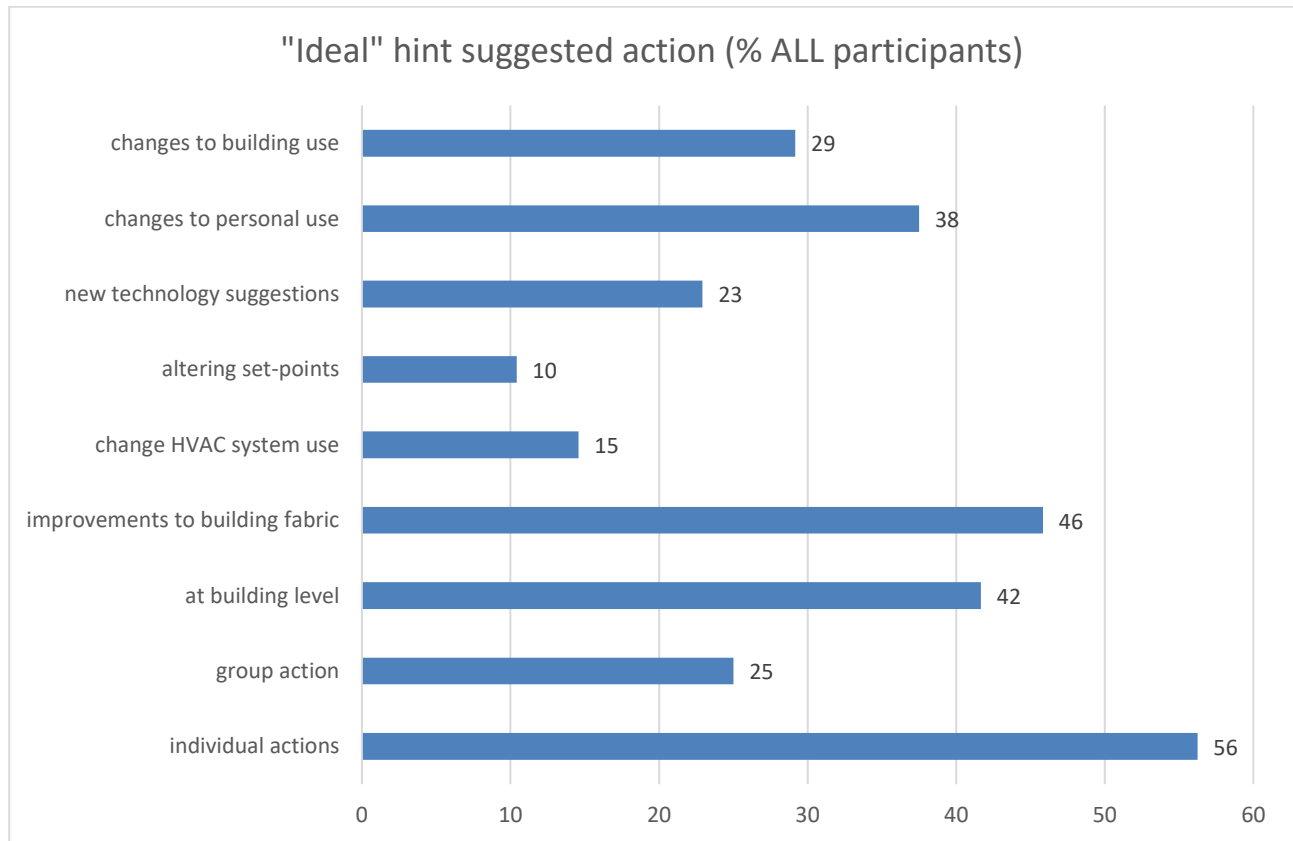


**Figure 9 Participants preference for topics in "ideal" hints**

These results indicate that participants are interested in ways to reduce/change the key energy related behaviours which were identified in earlier WP1 findings (D1.2 – Morton, Reeves and Bull, 2018).

The hints were explained to participants as typically taking a form of a suggested action and then a resulting benefit from the action. Figure 6 and Figure 7 show the findings from participants around their preferences for the suggested action of hints and the preference for the hint impact or saving. As can be seen in Figure 6,

there is an overall preference for individual action which participants can do themselves, individual actions (556%) and changes to personal use (38%). However there was also a preference for hints to also suggest improvements to building fabric (46%) and hints at a building level (42%). This is likely to be from the inclusion of various staff members within the feedback forum. Therefore it shows the importance of making hints which are useful both to everyday users of buildings but also for those more involved with the energy management and running of the buildings.



**Figure 10 Participants preference for suggested actions in "ideal" hints**

Regarding the preference for how the benefit of suggested hints are communicated Figure 7 shows the responses from all participants showing a clear preference for a variety of impact/saving types. As can be expected there was a preference for cost savings and energy (kWh) savings, and the results show these given as monthly values were preferred, monthly £/€ savings (42%), monthly energy comparisons (38%) and monthly kWh saving (40%). However there was also a preference for daily energy kWh savings (38%) to be included. Participants also showed a desire for more relatable impacts to be included such as the equivalent trees planted from the energy/emissions saved (35%).

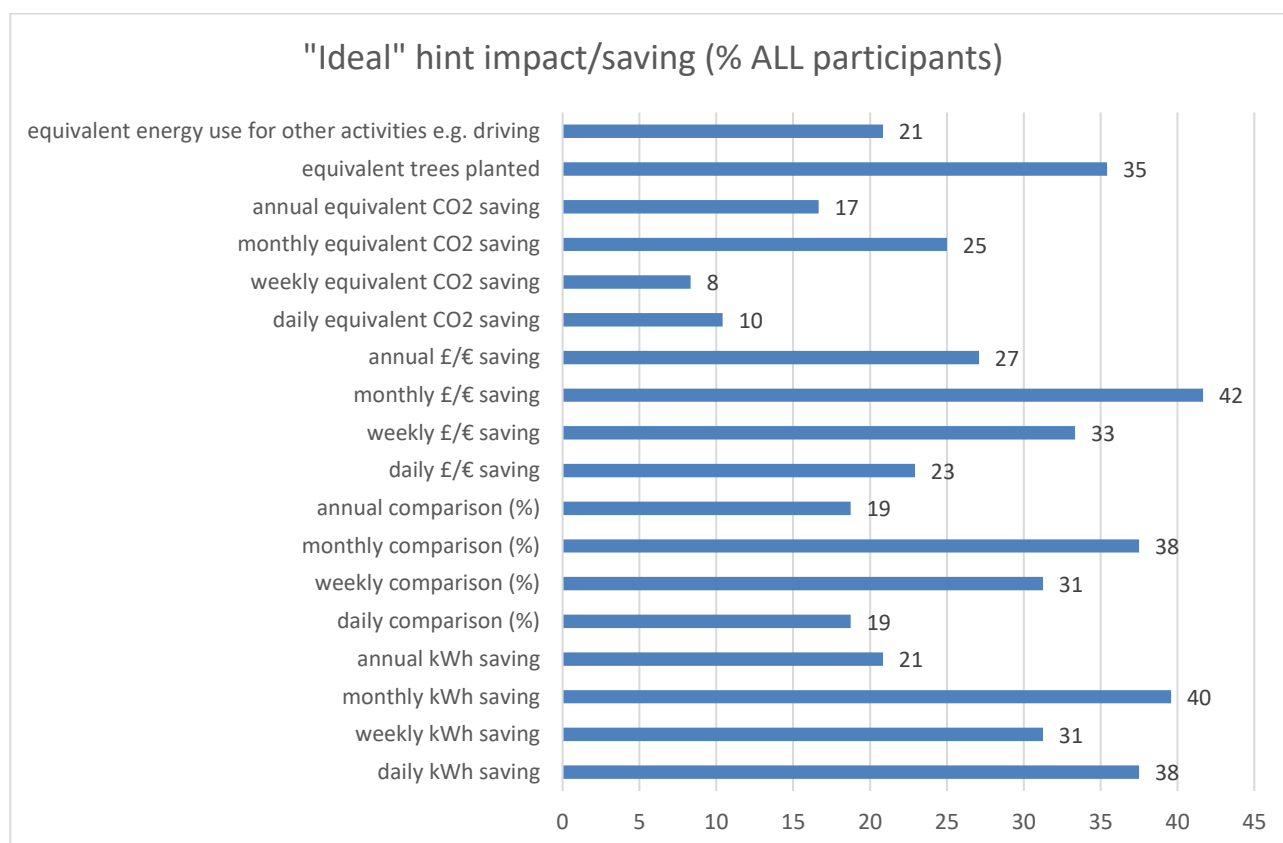


Figure 11 Participants preference for impact/savings in "ideal" hint

Given the tool recommendations regarding hints will differ from building to building down to the vastly different building uses within the eTEACHER pilot buildings, it is important that the results of preferences from building typologies are incorporated into the design of these hints, Appendix 9, therefore these results will be analysed in further detail to report building specific findings to the relevant project work packages.

### 3.6 Likelihood of taking part in "missions" according to building users

Similar to Activity 3, one of the key features of the eTEACHER tool relating to the gamification elements will be "missions" where users can carry out energy efficient actions and log these via the tool as a means to encourage engagement by users with the tool. Therefore it was important that during Feedback Forum 2 an understanding was achieved on what sort of missions users would be interested in, similar to the hints preferences. Activity 5 focused on this area, with use of two separate parts. The first part gave participants a list of example missions and asked them to indicate whether they would take part, might take part or would not take part with each example. The second part is discussed in Section 3.7.

The list of example missions given to participants included;

- "Stay below X £/€ of heating consumption per day for a week"
- "Be the classroom/apartment/department with the highest % saving from appliances this week"
- "Energy consumption challenge - stay below 60kWh per day for the week"



- “Join your neighbours and save energy tomorrow. Tuesday, August 21st. between 2pm-9pm”
- “Find out how many kWh can you save in one week by using lighting following eTEACHER instructions”
- “Energy weekly warrior – can you complete the weekly energy saving action before the week is up”
- “Eco-Actions – reduce your carbon footprint by reducing your heating 1 degrees”
- “Save X % of energy consumption compared to last month”
- “Power off challenge week – can you reduce your consumption by ensuring all lights and appliances are switched off when not in use”
- “Save X £/€ in lighting consumption this week”
- “Feel the breeze – save X% of cooling energy by making use of windows instead to cool rooms down”
- “Sharing is caring – pass on an energy conservation tip to another building user today”

Figure 8 shows the results from all of the FF2 participants, Appendix 10 contains building type results. There was a clear preference for the missions which were more of a challenge such as the power off challenge week (65% indicated they would take part), finding out their week savings by following eTEACHER instructions (56% indicated they would take part), or the feel the breeze challenge (50%). However it seemed missions which focused on generating the highest savings were not as popular with participants (31% reporting they would not take part), indicating that a competition element to missions may not be favourable within the eTEACHER buildings.

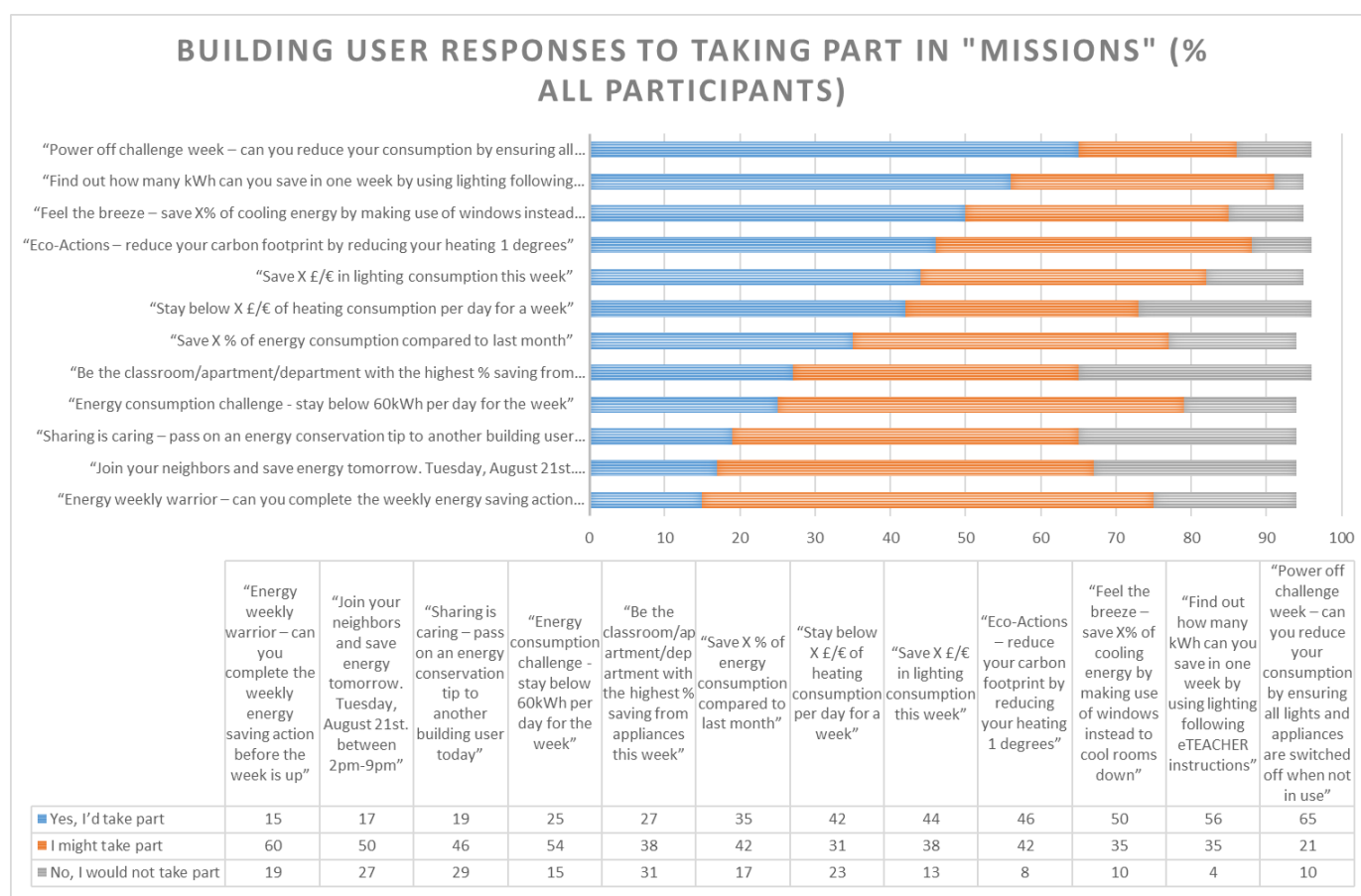


Figure 12 Likelihood of building users to engage in missions based on Activity 5 results



### 3.7 Ideal “missions” by pilot building preferences

The second part to Activity 5 looked at what participants considered their “ideal” mission would include. In this activity participants had a handout with various mission options including the topic of the mission, the mission duration, the impact of the mission, the mission frequency and the specification of the mission i.e. whether it should be individual or team based etc. Participants simply had to tick any information in each category that they would find useful in the missions suggested by the eTEACHER tool. In this section the “ideal” mission based on the responses of all participants is discussed, however the preferences based on building typology are included in Appendix 11.

Figure 9 presented the results relating to the options given for mission topics. The options given included;

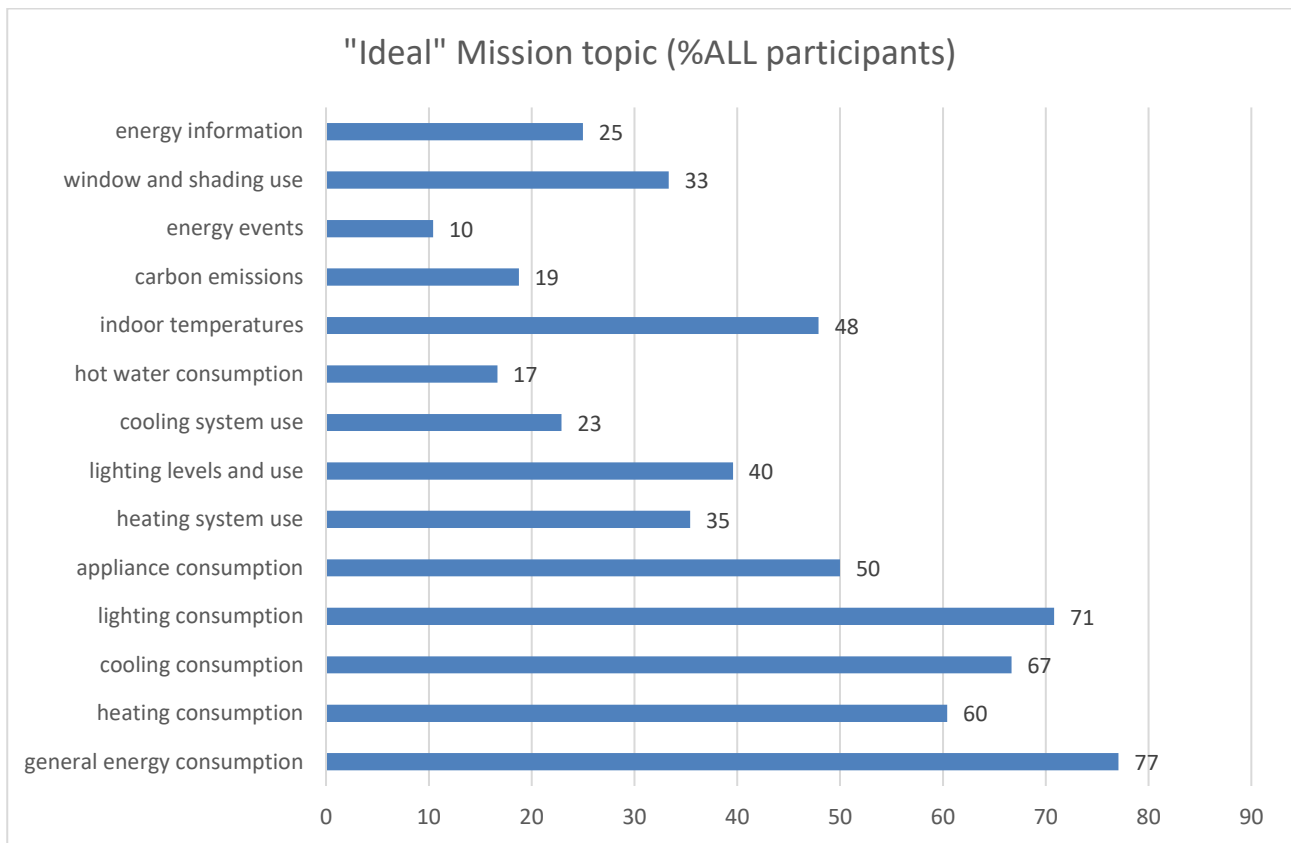
- general energy consumption
- heating consumption
- cooling consumption
- lighting consumption
- appliance consumption
- heating system use
- lighting levels and use
- cooling system use
- hot water consumption
- indoor temperatures
- carbon emissions
- energy events
- window and shading use
- energy information

The topics which were identified as being most beneficial to participants included;

- General energy consumption (77%)
- Lighting consumption use (71%)
- Cooling consumption use (67%)
- Heating consumption use (60%)

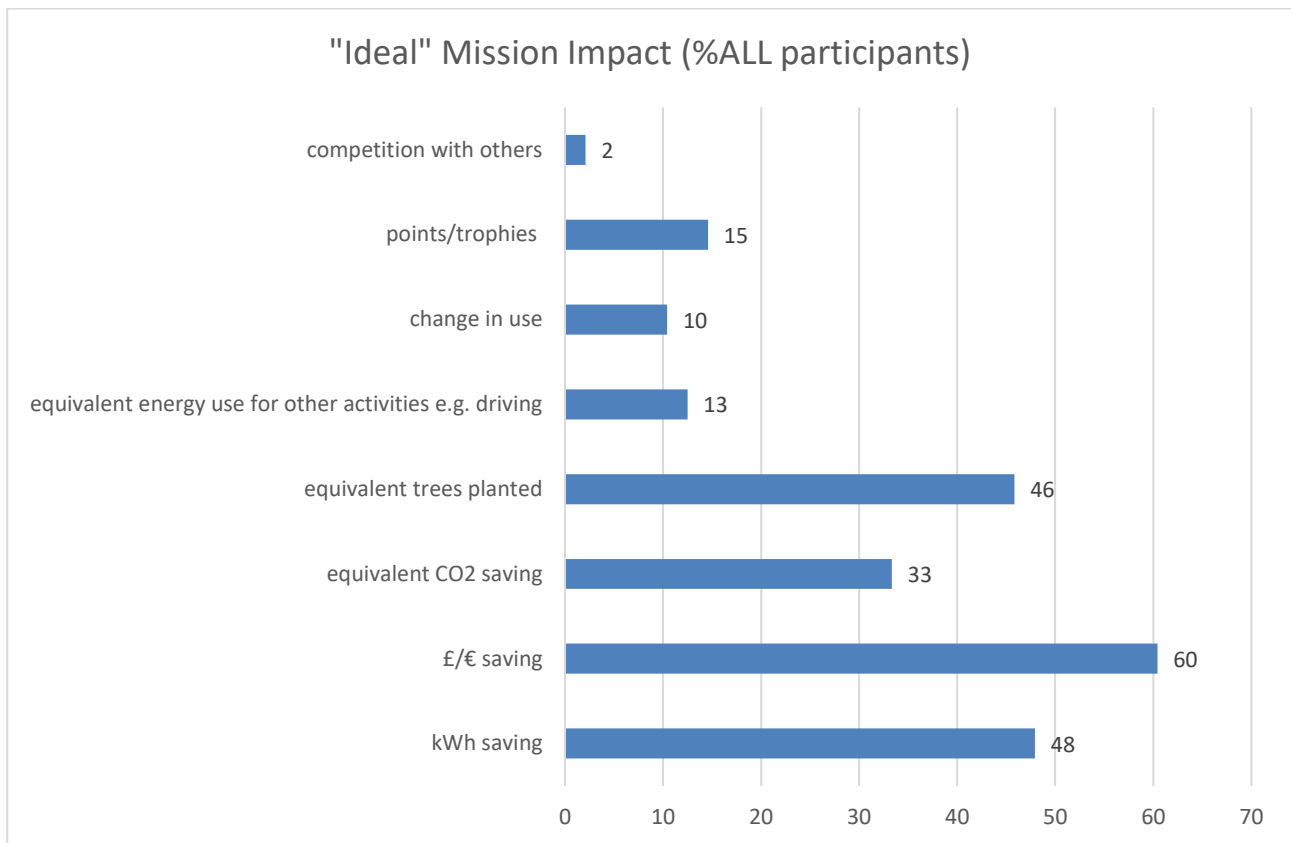
Indicating a preference for missions to also be focused specifically on energy related actions, similar to the preference for hints.





**Figure 13** Participants preference for "ideal" mission topic

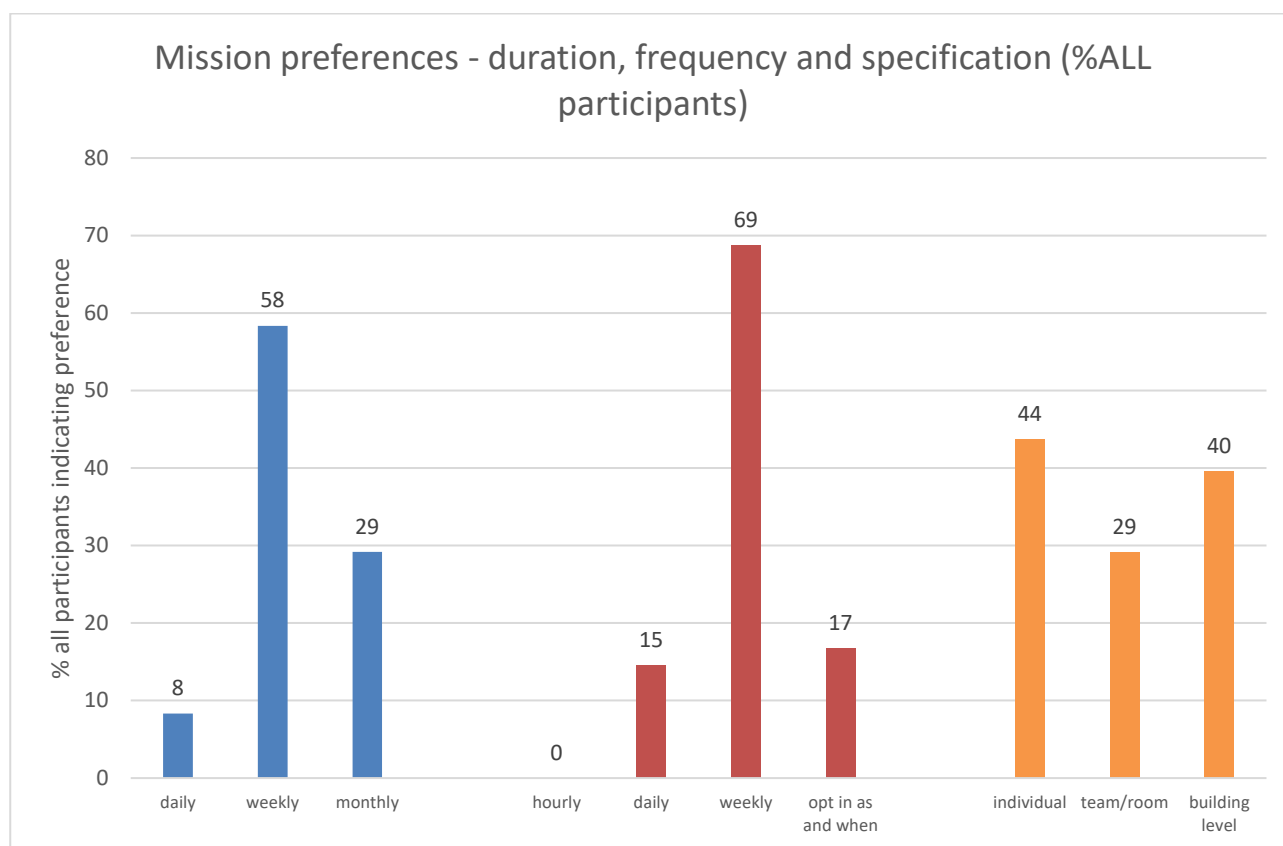
Similar to Activity 3, the missions were explained to participants as typically taking a form of a suggested action or challenge and with a resulting benefit or target for the action. Figure 10 shows the findings from participants around their preferences for the suggested impact/benefit for missions. As can be seen in Figure 10, there is an overall preference for the impact to be related to cost savings £/€ for missions (60%), with the related energy savings kWh (48%) and equivalent trees planted (46%) also being indicated highly for preferences. As hypothesised from Activity 3, there is a clear lack of interest in the missions including a competitive edge with only 2% of participants indicating they would like competition with others to be included in the missions.



**Figure 14** Participants preference for “ideal” mission impacts

A key difference between missions and hints is the flexibility available through use of missions. Missions can be set to last different duration lengths, could have different levels of frequency as to when new missions are available and also flexibility in the specifications of missions relating to who is involved in the desired action(s). Therefore the participant’s handout for the second part of Activity 5 also included options for each of these three categories. The results of which can be seen in Figure 11.

Overall there was a clear preference for missions to have a duration of around a week, which also agrees with the preferences seen in the mission examples given as weekly examples scored more favourably. Regarding the frequency of missions being available, 69% of participants indicated they would prefer weekly missions. There was not as clear a preference relating to the specification of missions with 44% indicating they would prefer individual missions and 40% indicating a preference for building level missions. However a much stronger preference for individual missions was seen in the residential responses (79%), Appendix 11.



**Figure 15** Participants preference for “ideal” mission duration, frequency and specification

## 4 Summary

The aim of Feedback Forum 2 was to collect building user input on the eTEACHER tool app functionalities and gamification elements. All 12 pilot buildings partook in a FF2 session, with valid data collected from 48 participants representing 11 of the 12 buildings. This report has summarised the findings generated from five core “activities” carried out by the participants of FF2.

The findings from Feedback Forum 2 indicate that building users would like the eTEACHER tool to include more informative options, with their “ideal” tool including indoor temperatures, indoor environmental quality scores, energy information and data, energy hints and tips, pulse (IEQ) voting and energy comparisons. Overall energy information and data was ranked the highest importance with 89% of participants ranking it very important or important. Other options which ranked high (combined votes of very important and important) were energy hints and tips (88%), building specific profiles (86%) and reporting function (84%). Indicating a preference for a practical informative tool, which is still visually engaging (following interest shown in gamification elements and ways to visualise energy use).

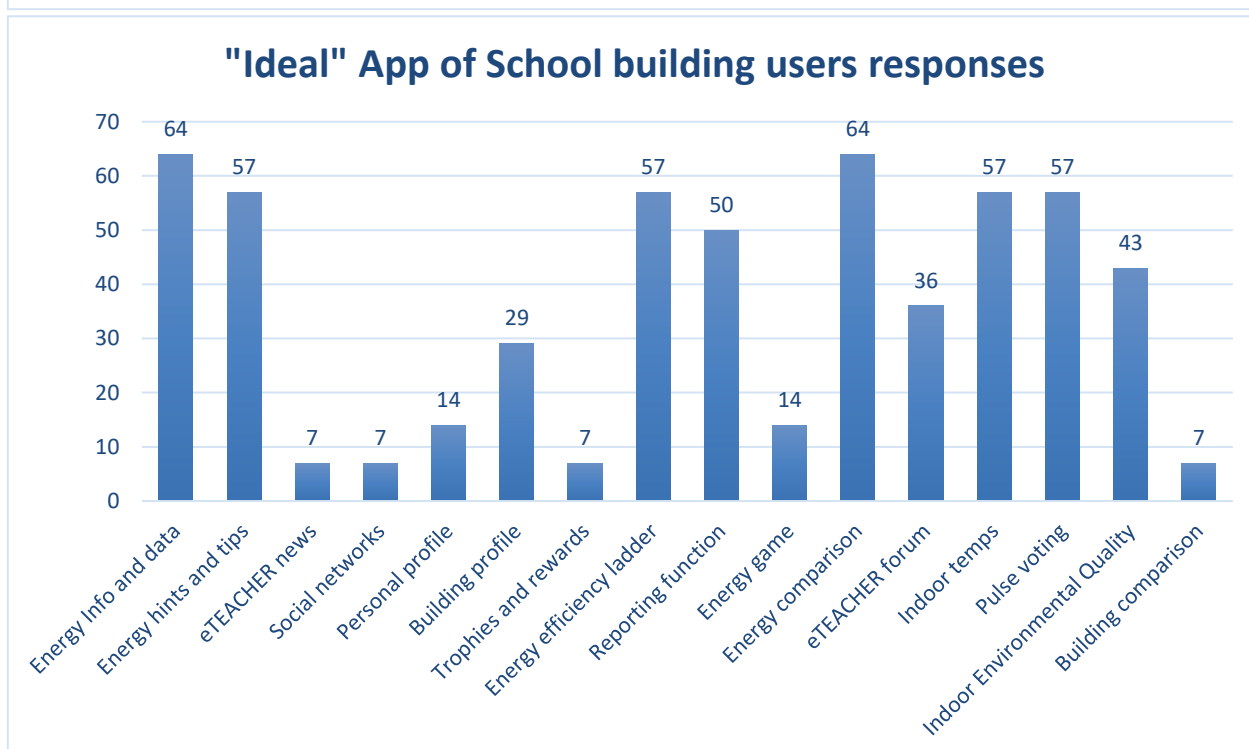
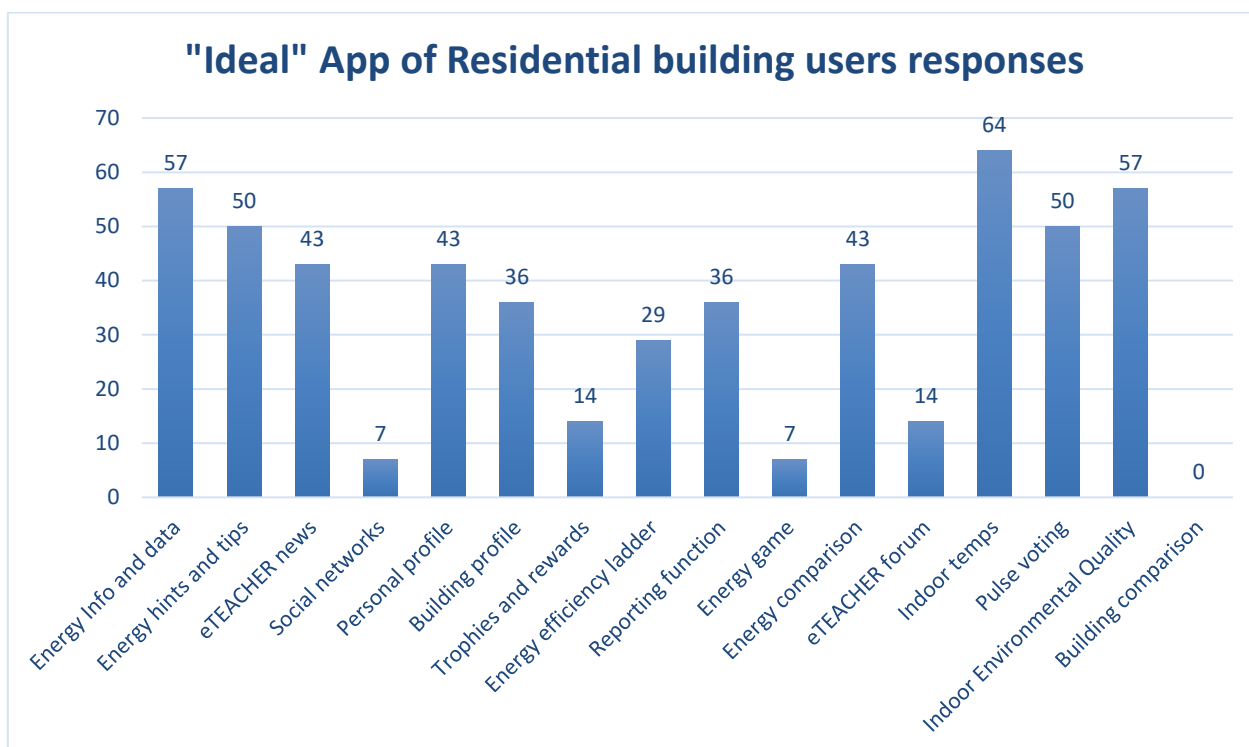
Social networks were not seen as important by participants with many stating they would not be interested in platforms such as Facebook, Twitter or Instagram being linked to the eTEACHER tool. Similarly the results showed a lack of interest in elements of competition within the tool, preferring more collective actions of a target rather than being the one to save the most.

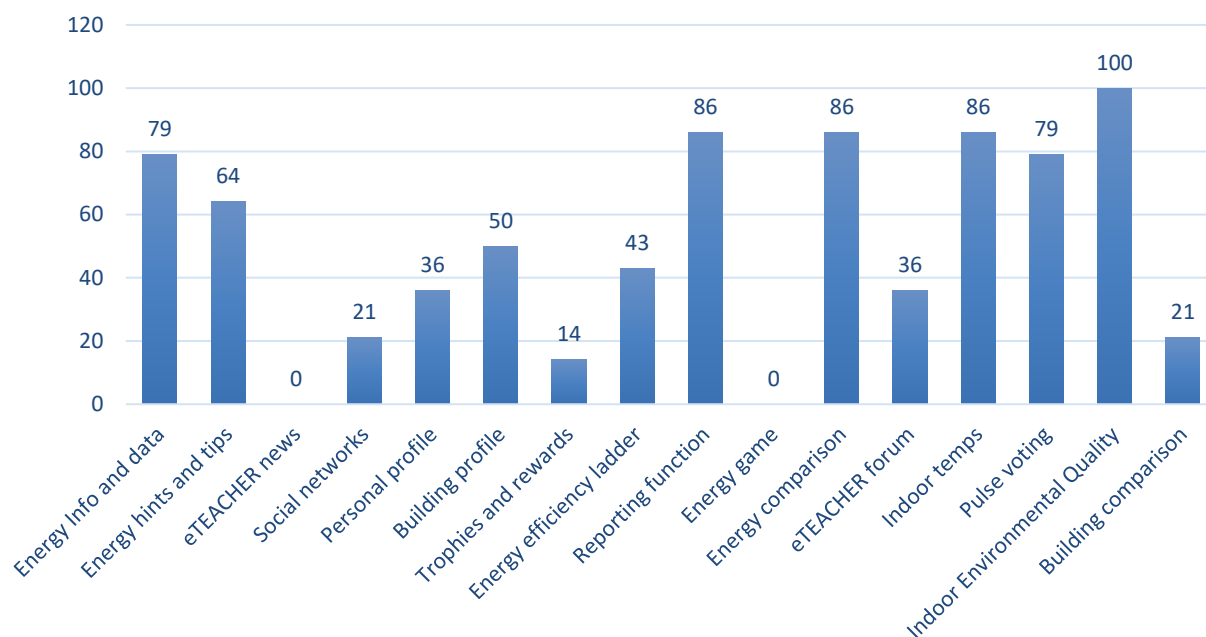
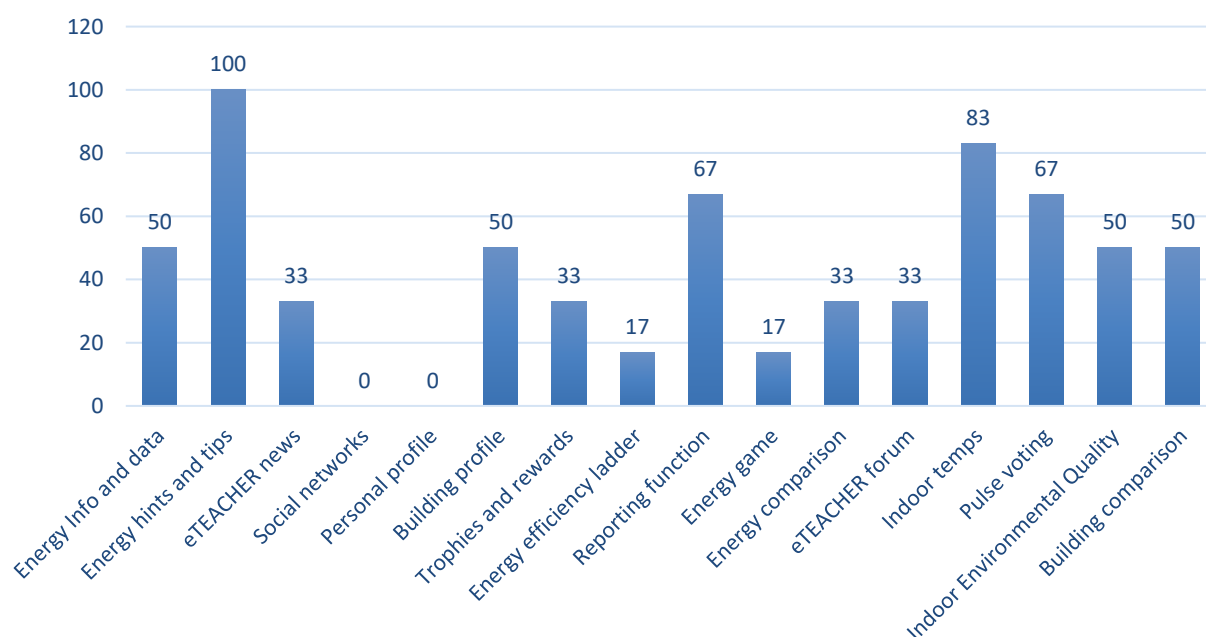
It was found that participants “ideal” hints and missions both included general energy consumption, heating consumption use, lighting consumption use and cooling consumption use. The preferred format of impact or benefit from completing such hints or missions was reported as being energy savings (kWh), cost savings (£/€) and the equivalent trees planted (emissions savings). Missions were preferred to be on a weekly basis and last the week, with a roughly equal split between preference for individual missions and building level missions.

The findings from Feedback Forum 2 supports many of the earlier WP1 findings, but has also allowed for more specific building related preferences to be uncovered. These building specific results shall allow other work packages to tailor the recommendations and advice given to the tool users specific to their building.



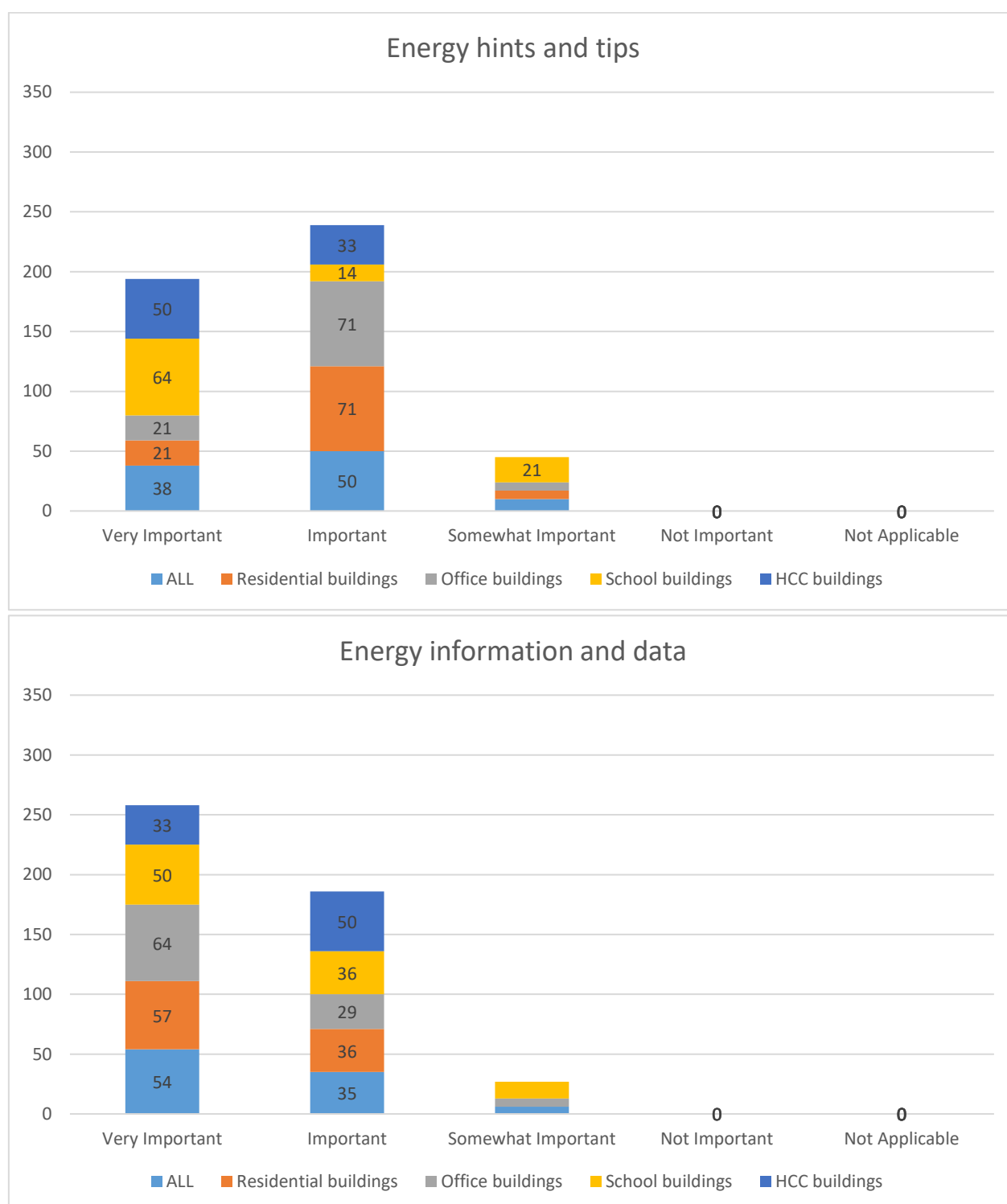
## 5 Appendix - "Ideal" App functions by building typology

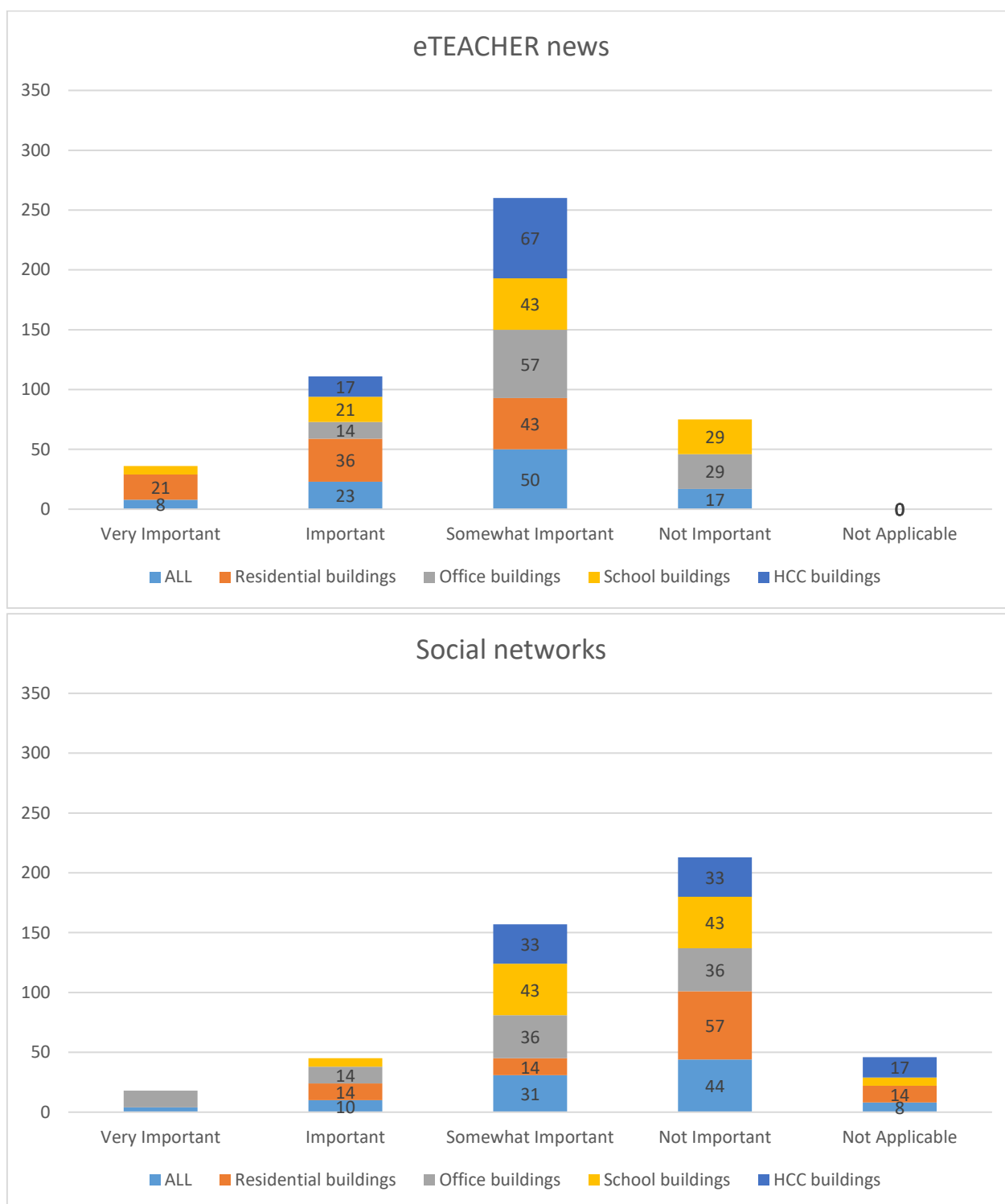


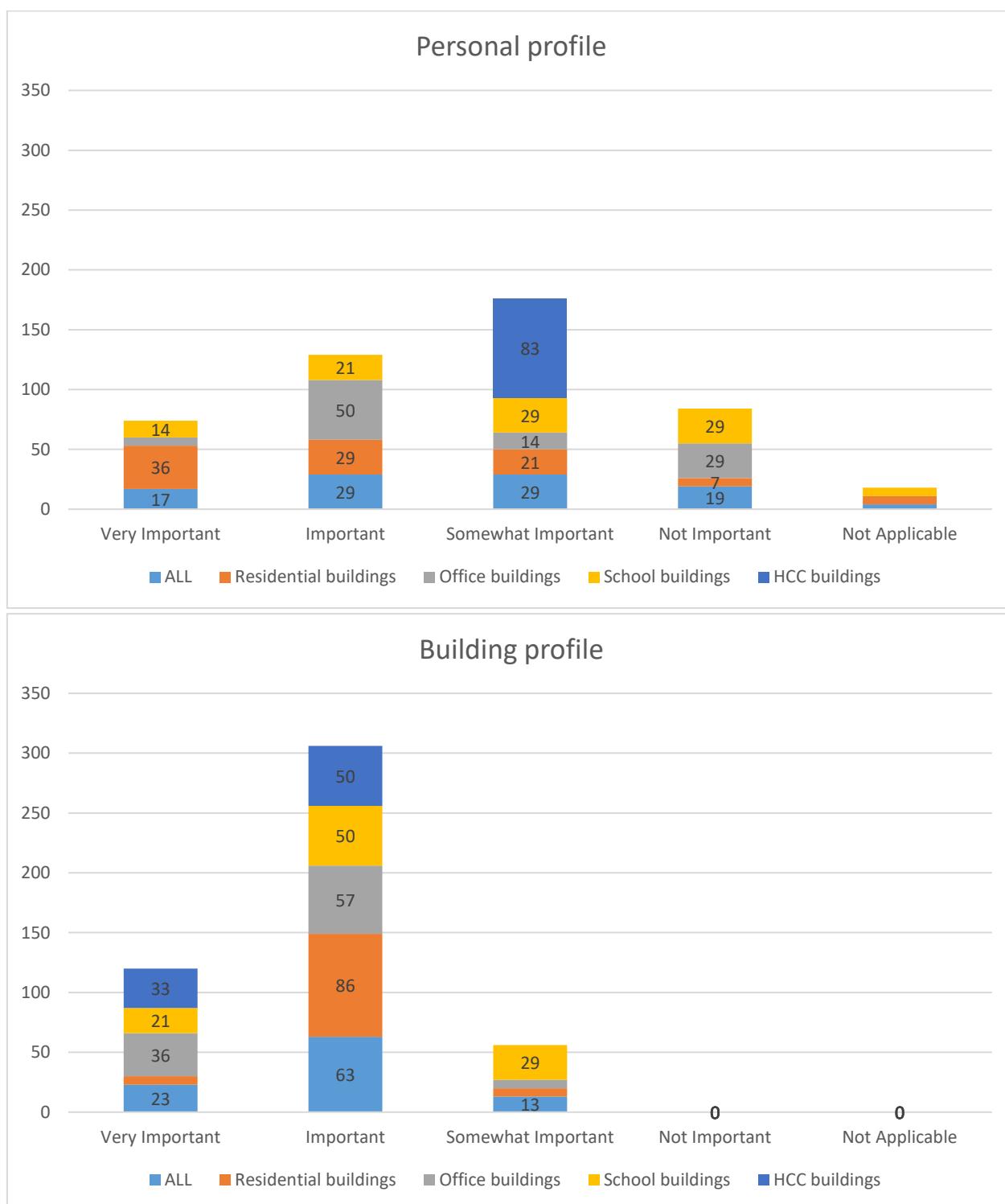
**"Ideal" App of Office building users responses****"Ideal" App of HCC building users responses**

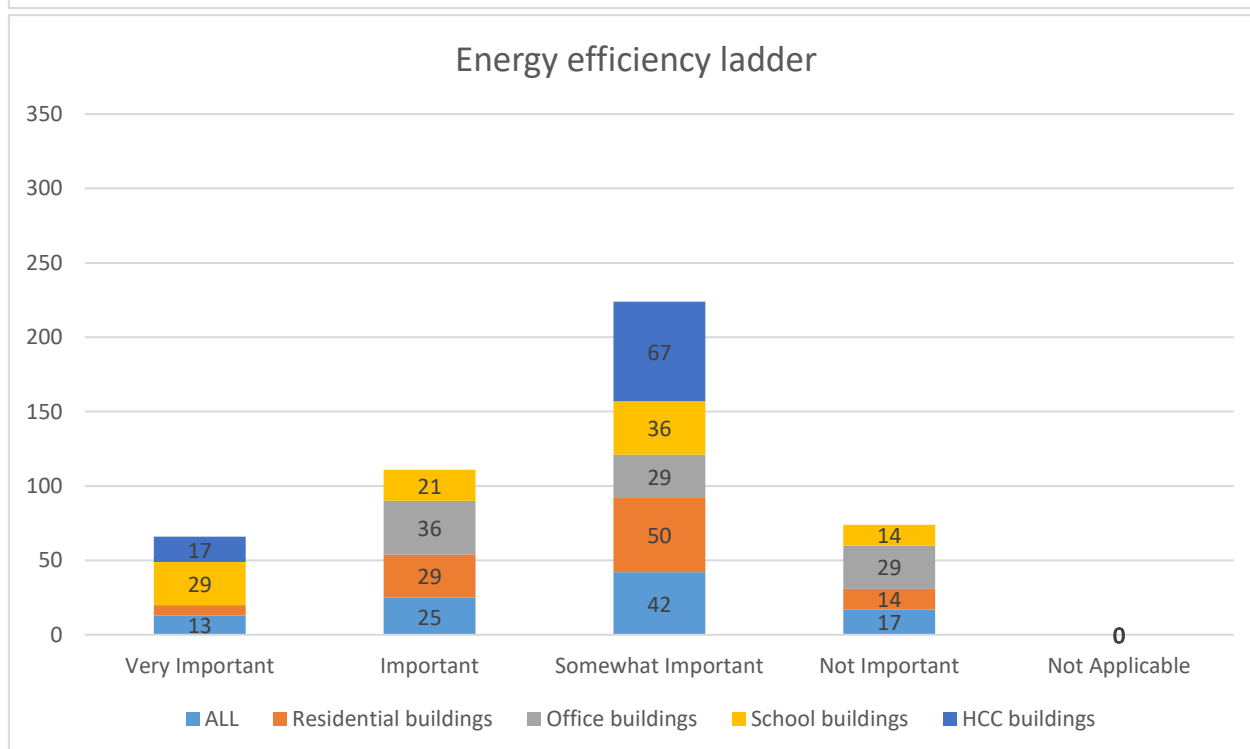
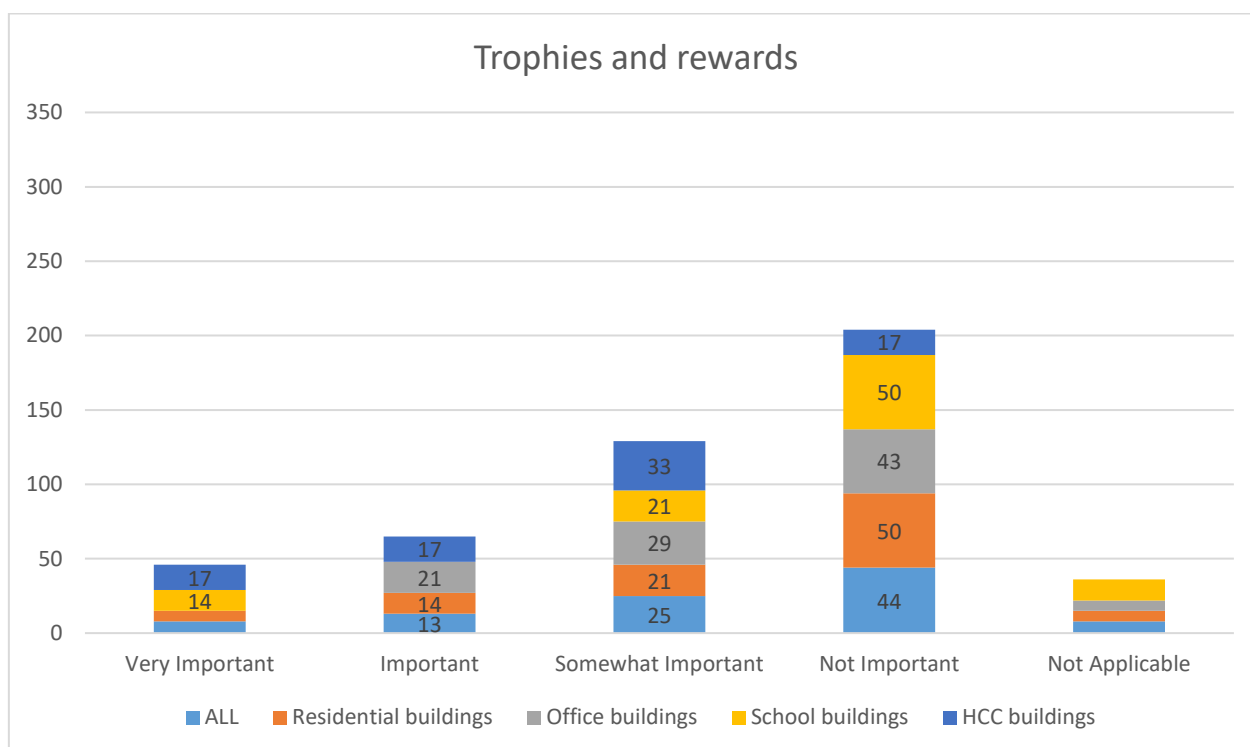


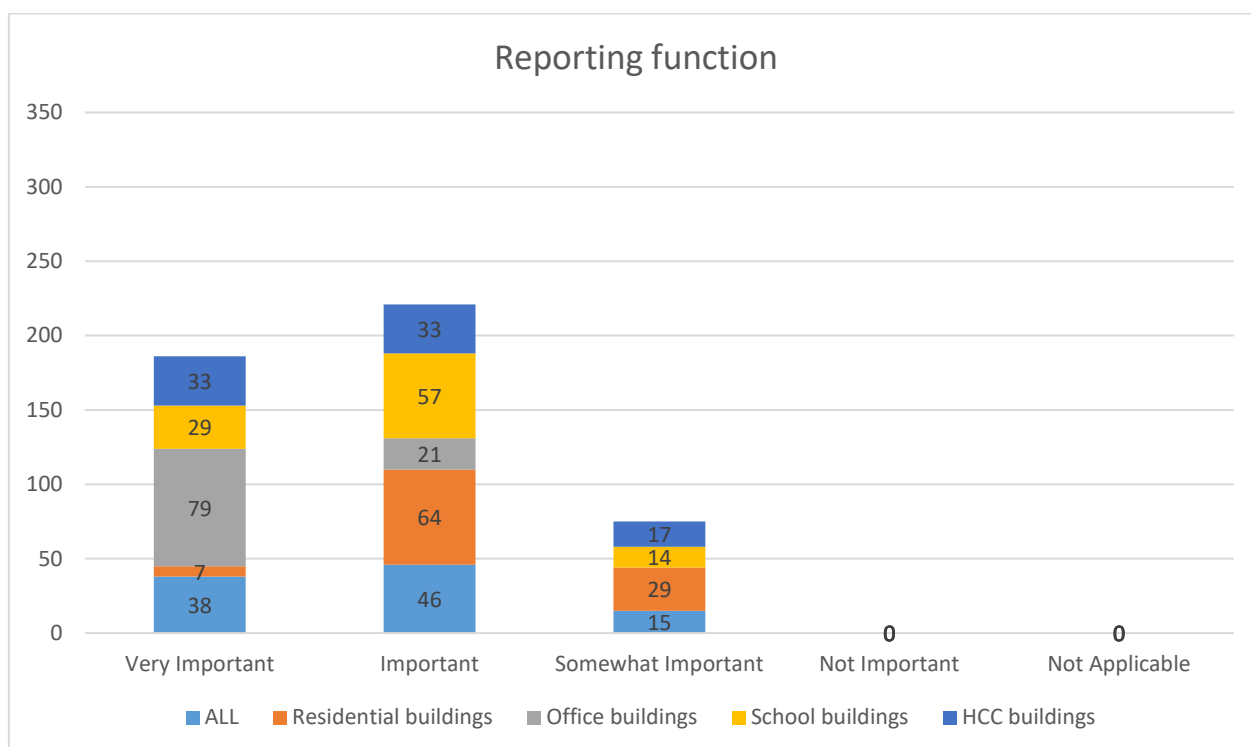
## 6 Appendix - Importance of specific App information according to building users



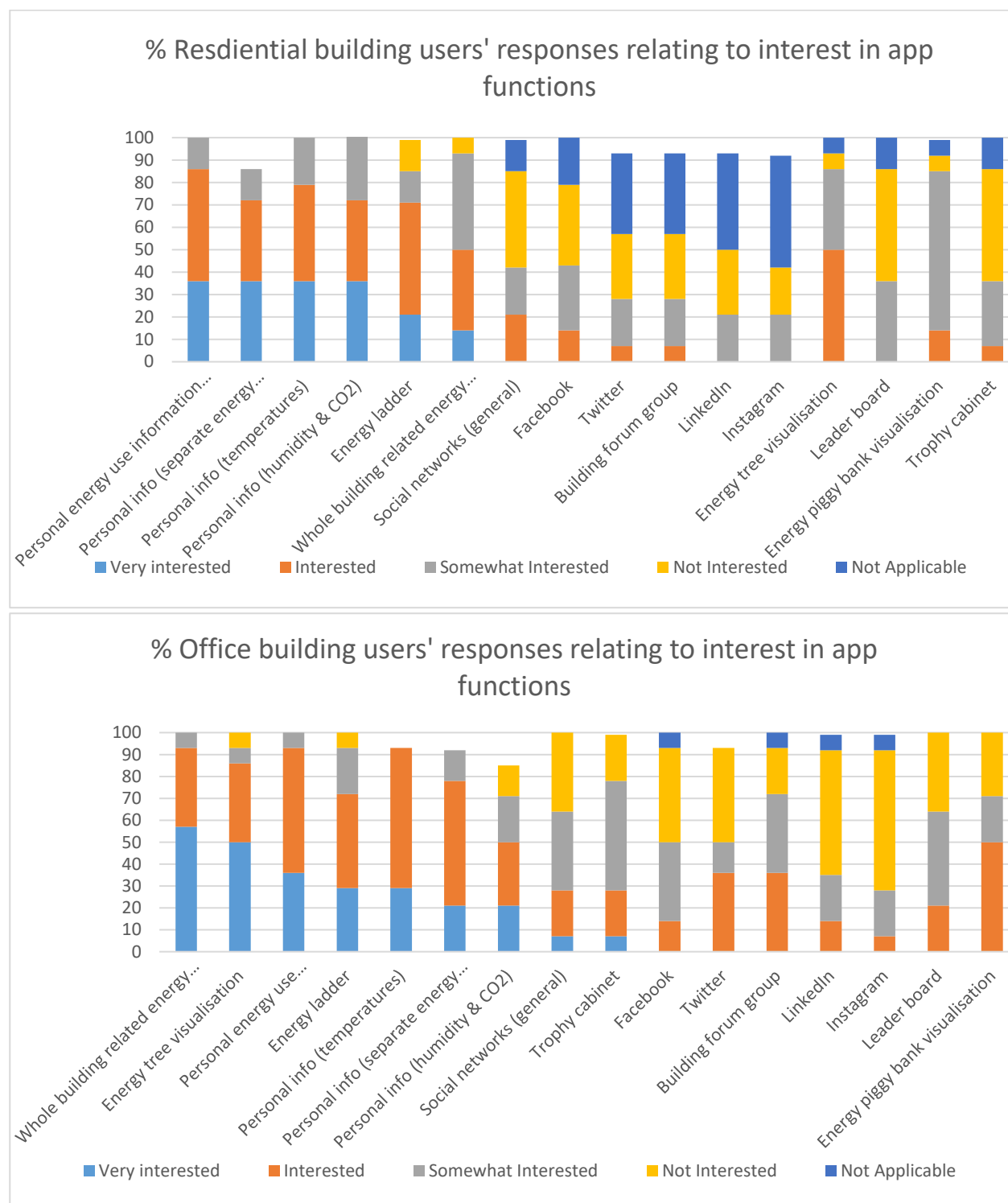




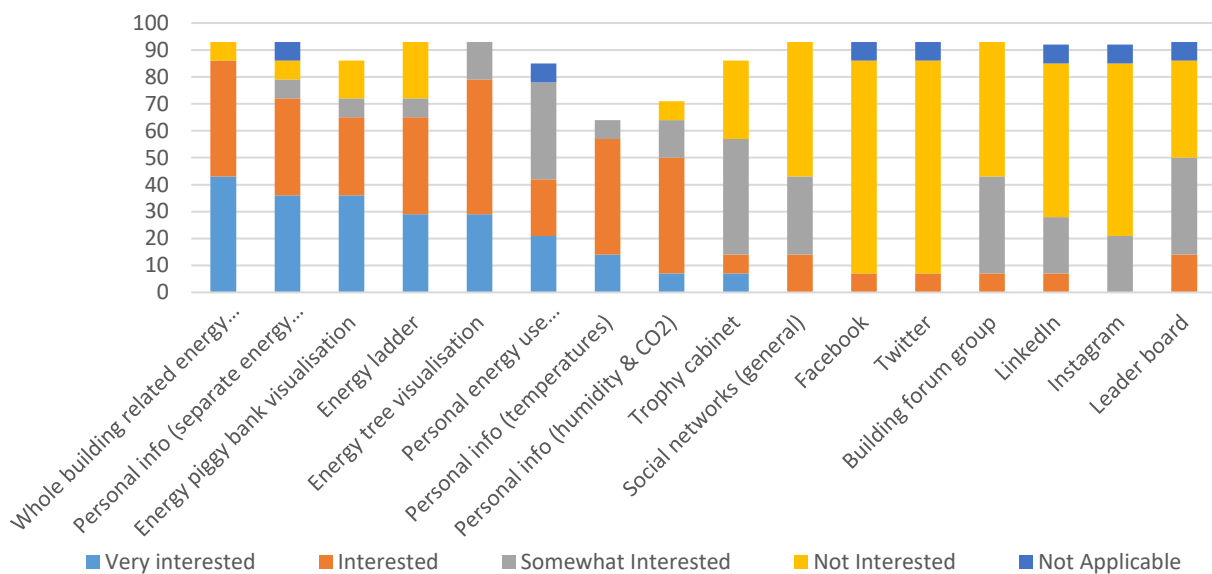




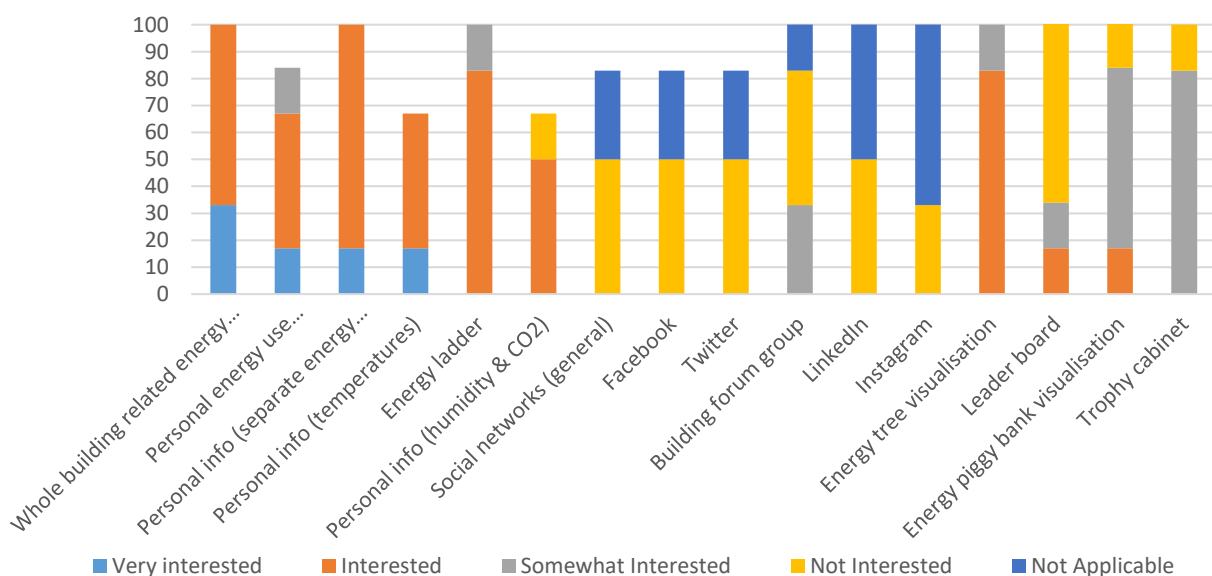
## 7 Appendix - App function interests by building typology



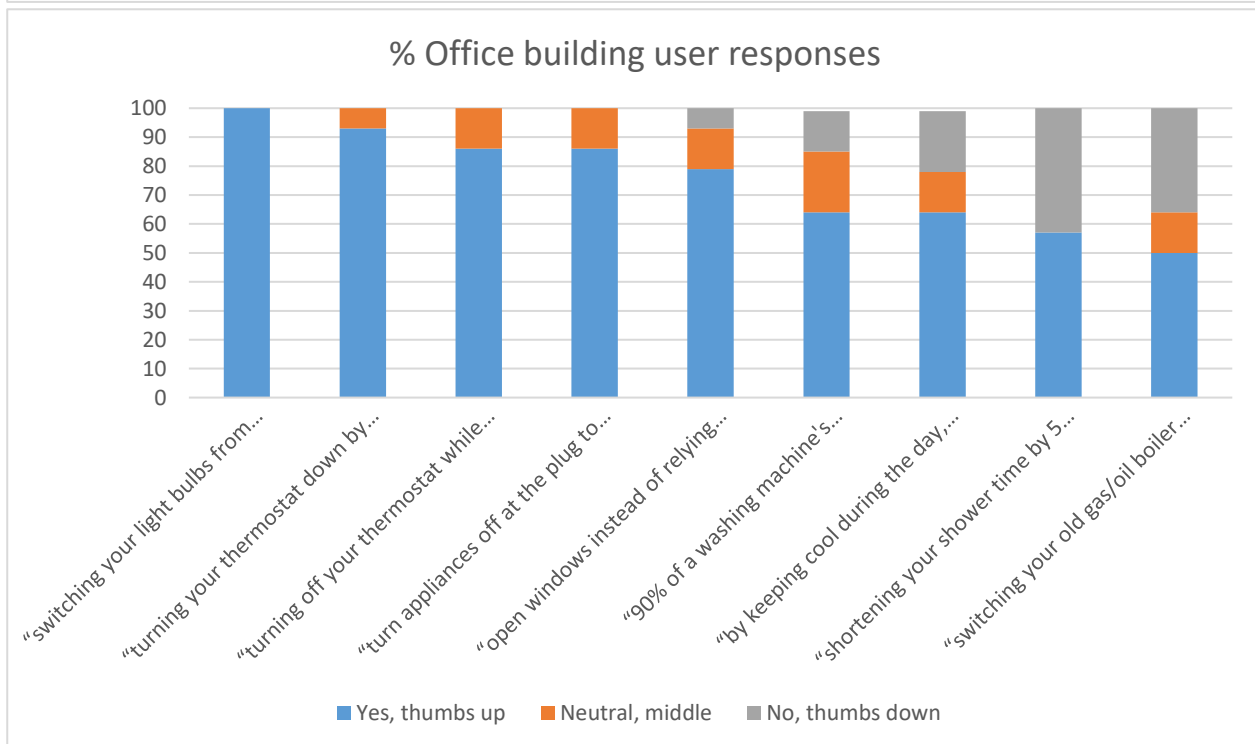
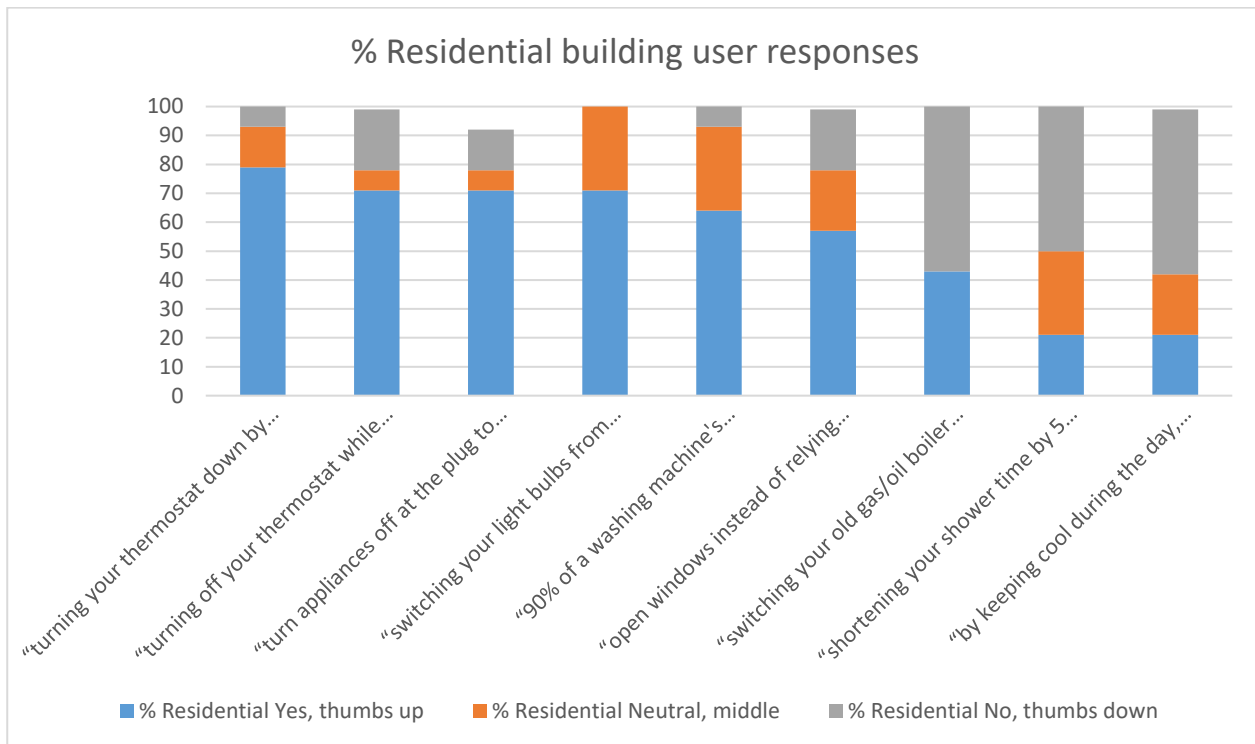
% School building users' responses relating to interest in app functions



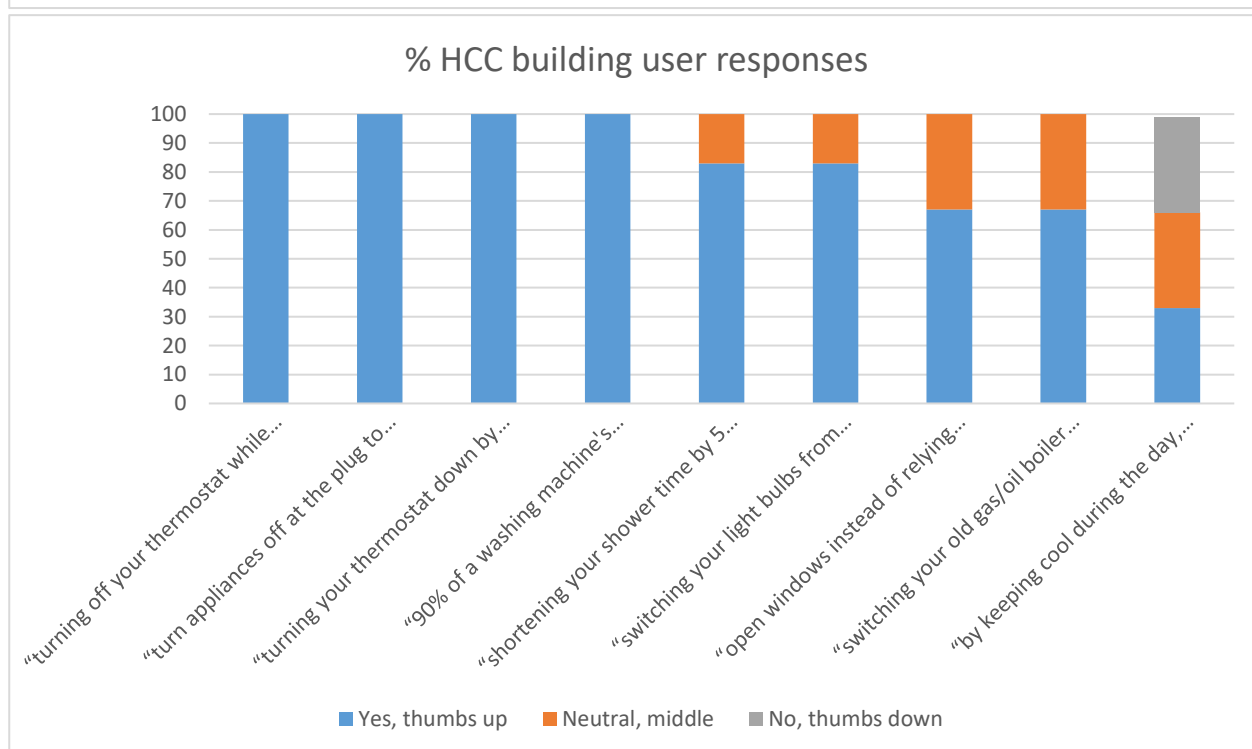
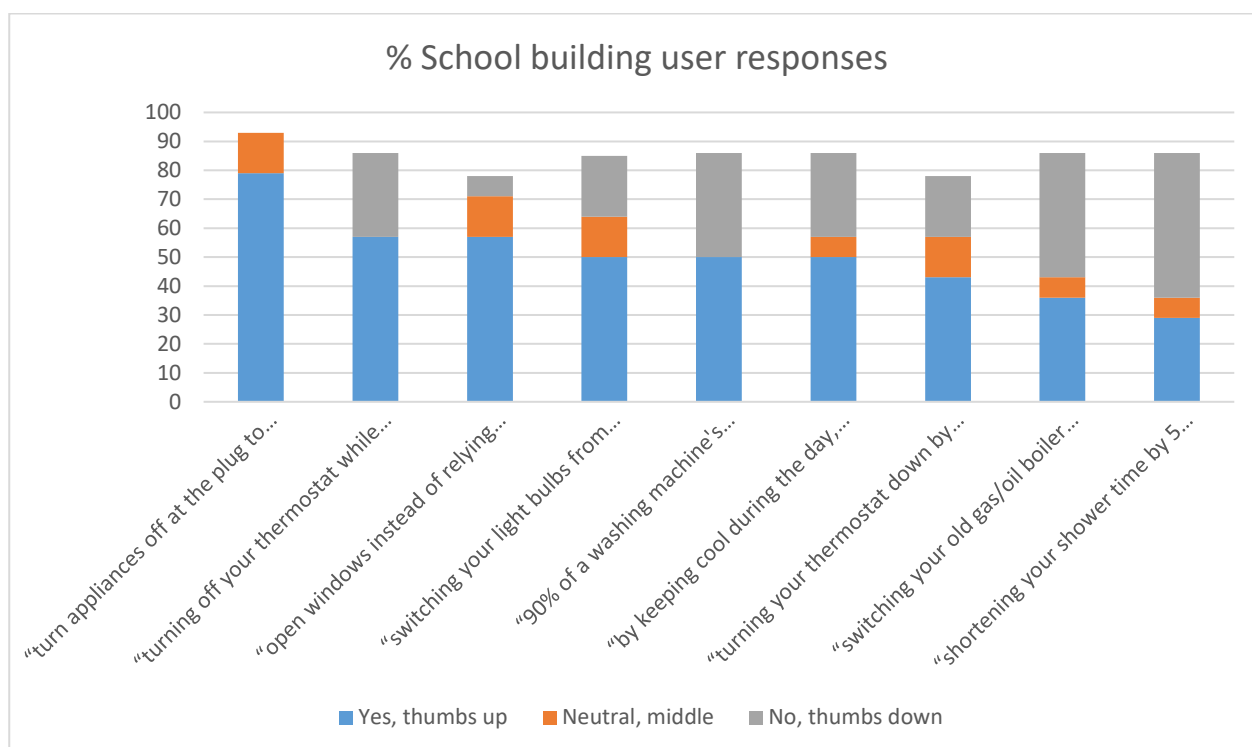
% HCC building users' responses relating to interest in app functions



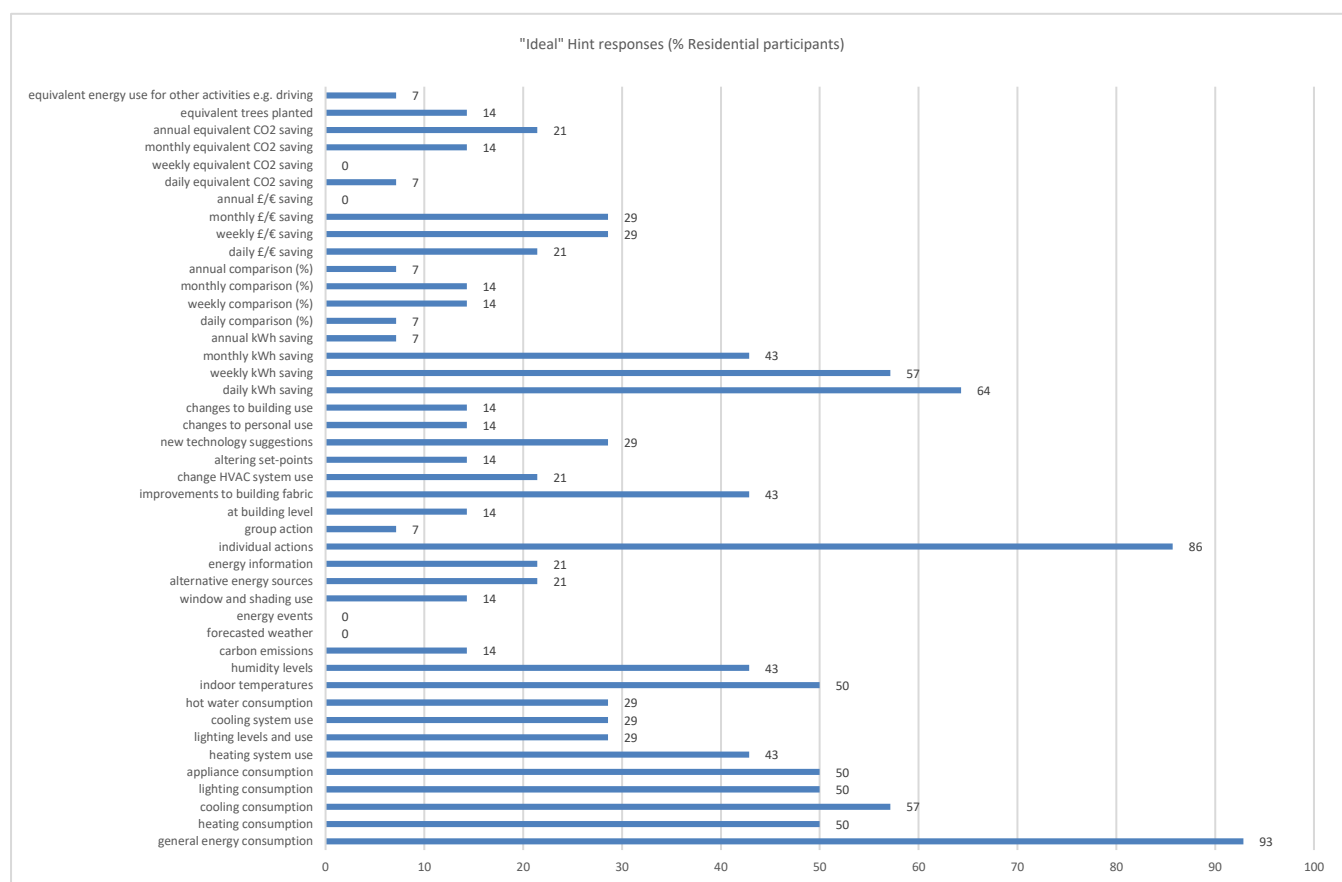
## 8 Appendix - Usefulness of “hints” by building typology

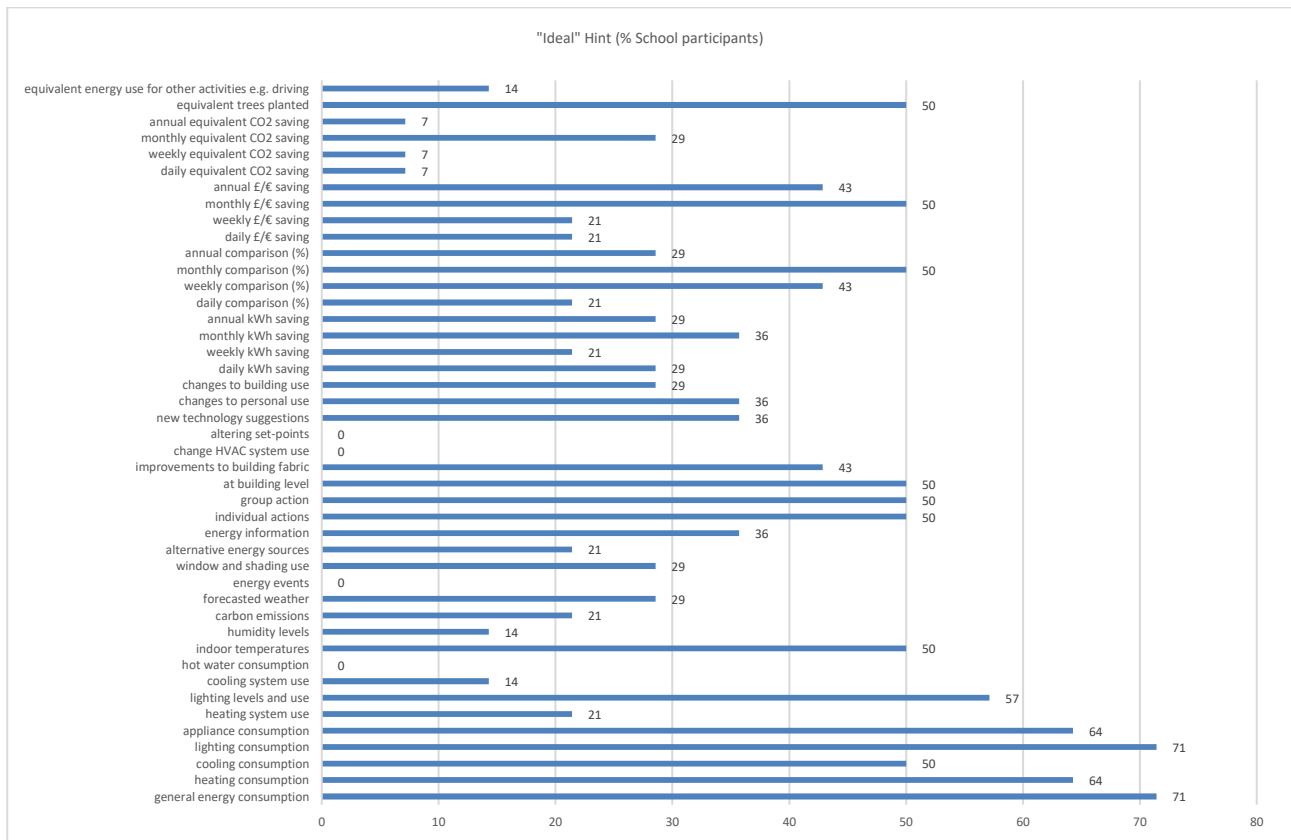
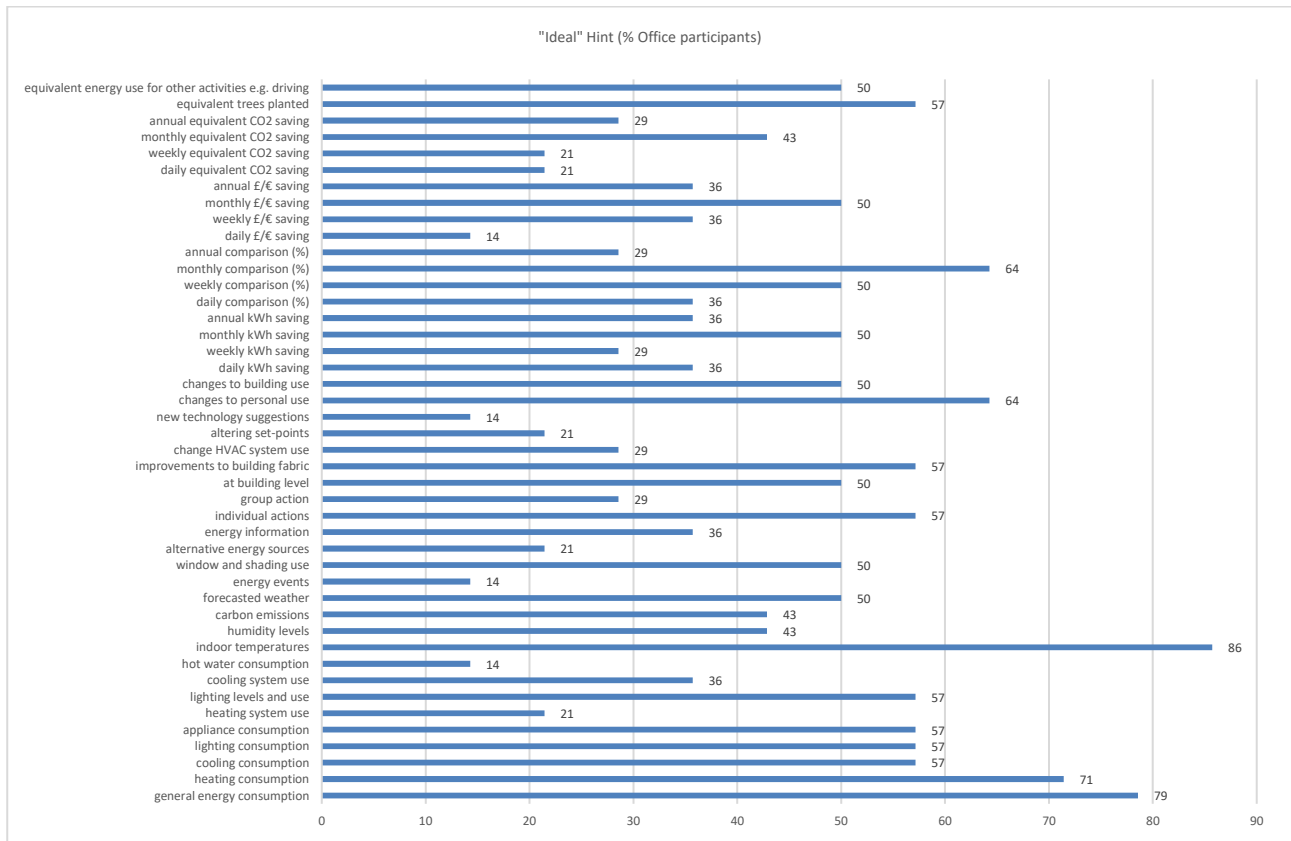


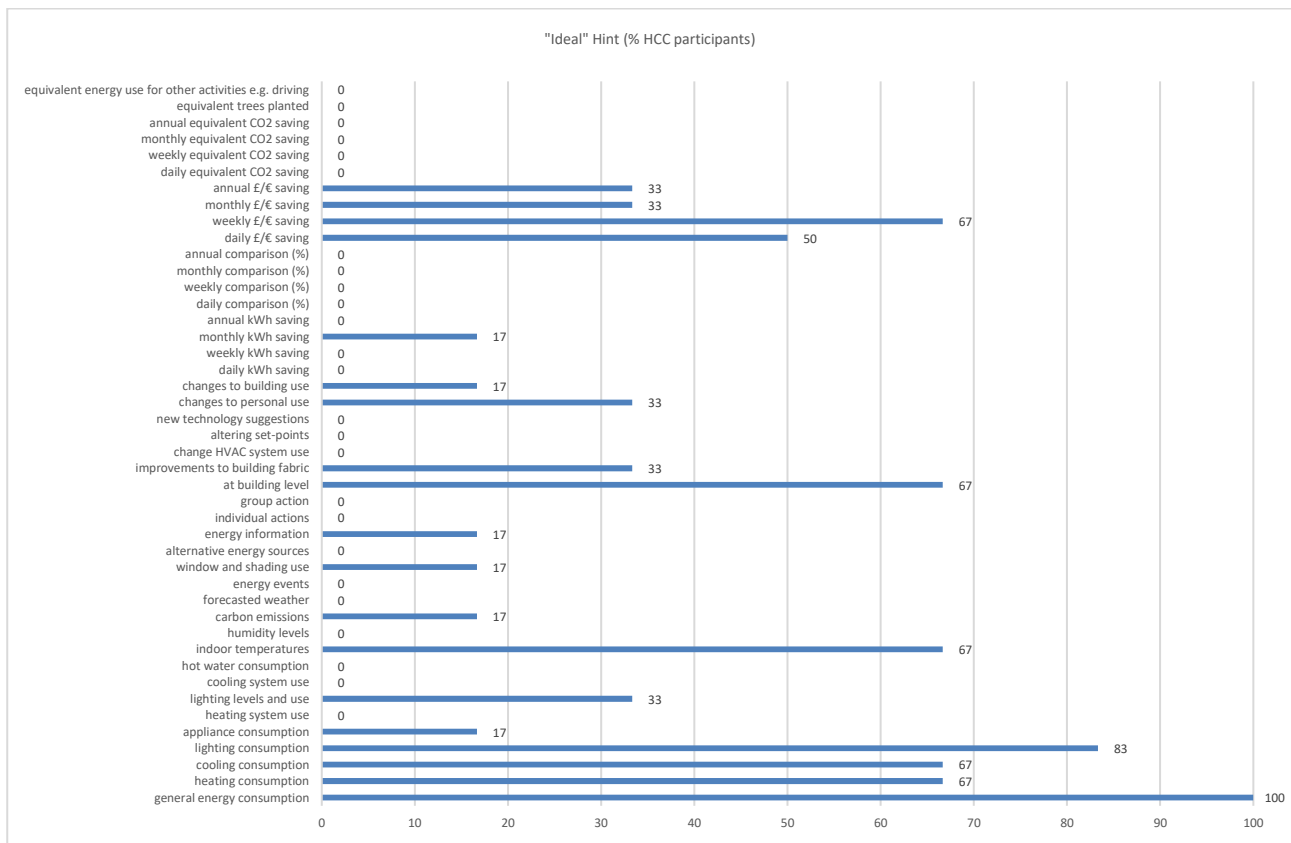




## 9 Appendix - “Ideal” Hints by building typologies

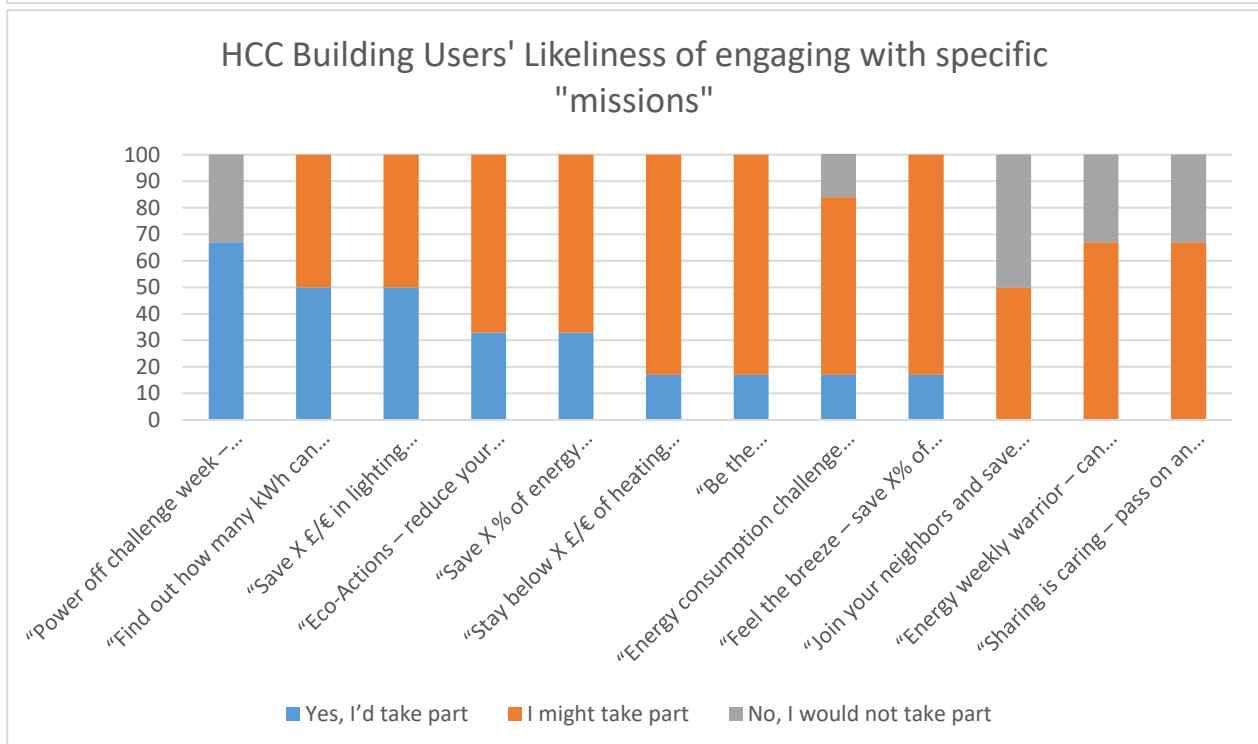
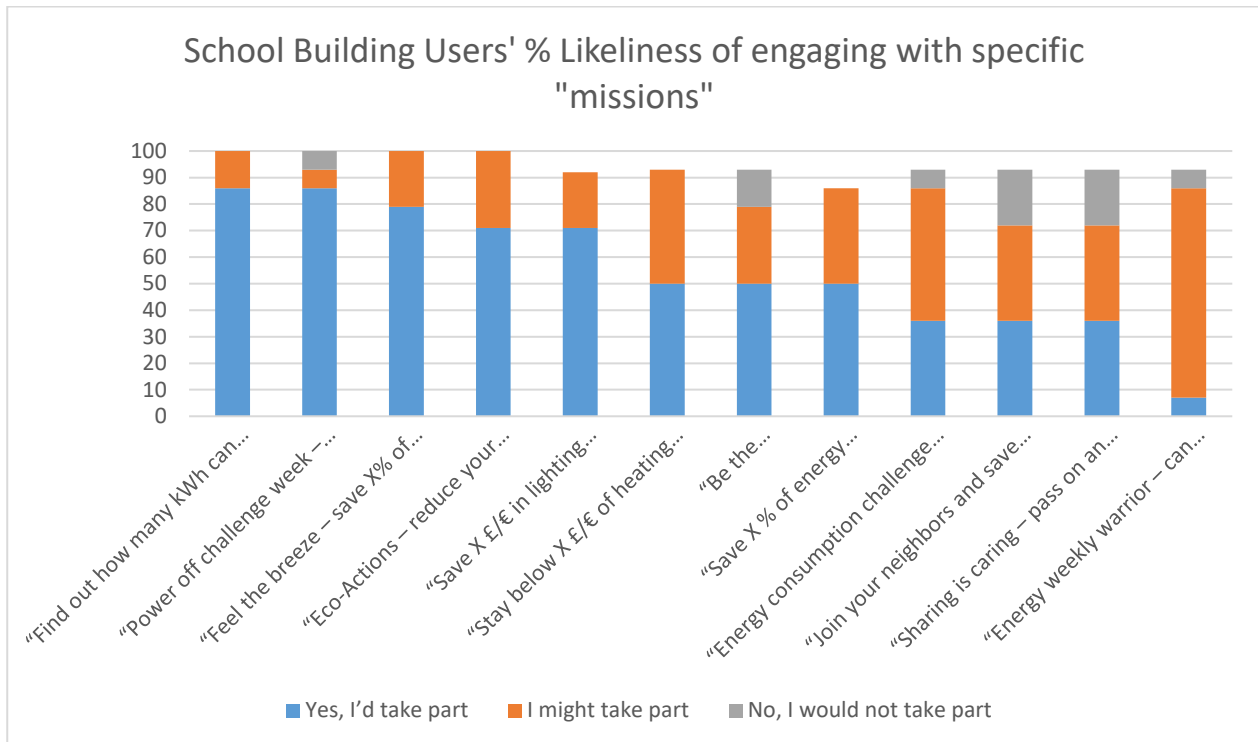




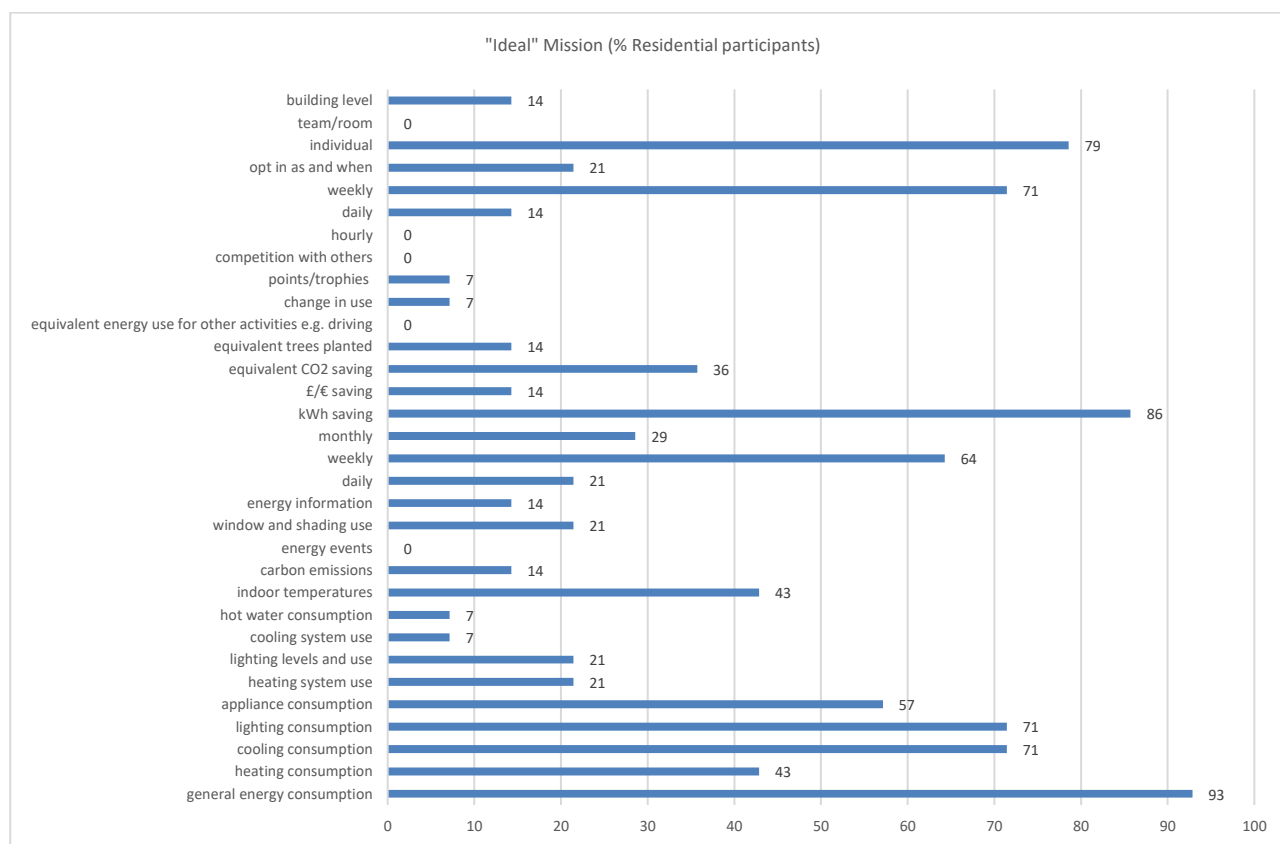


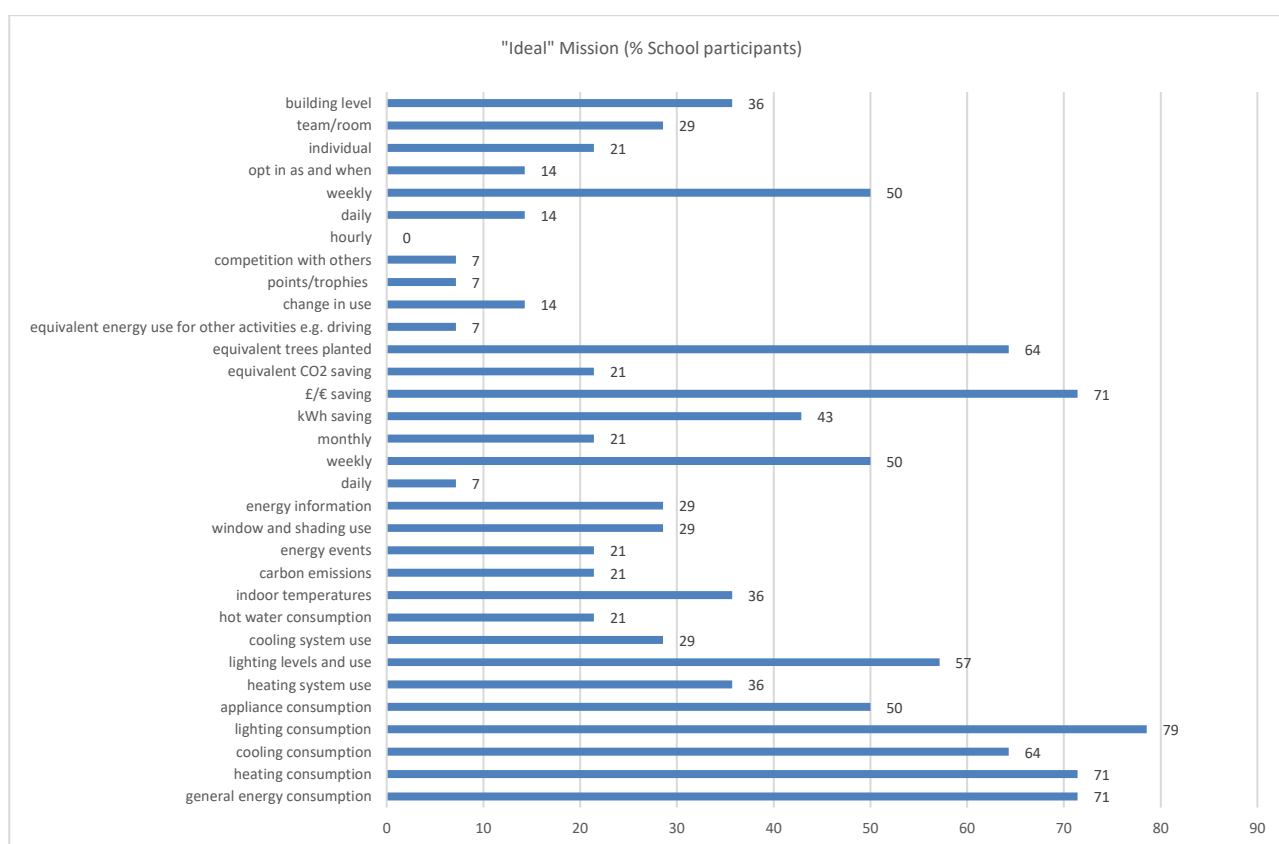
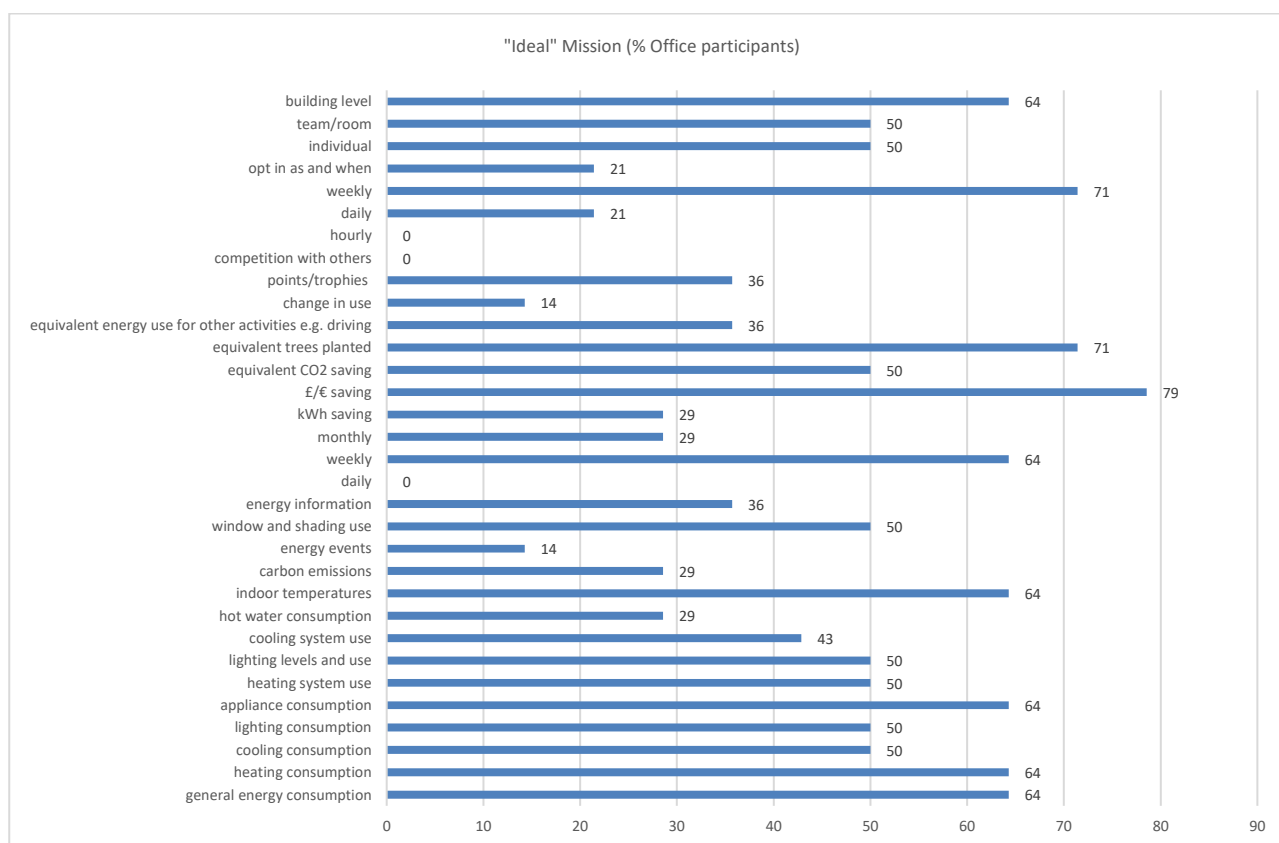
## 10 Appendix - Likelihood of engagement with “missions” by building typology



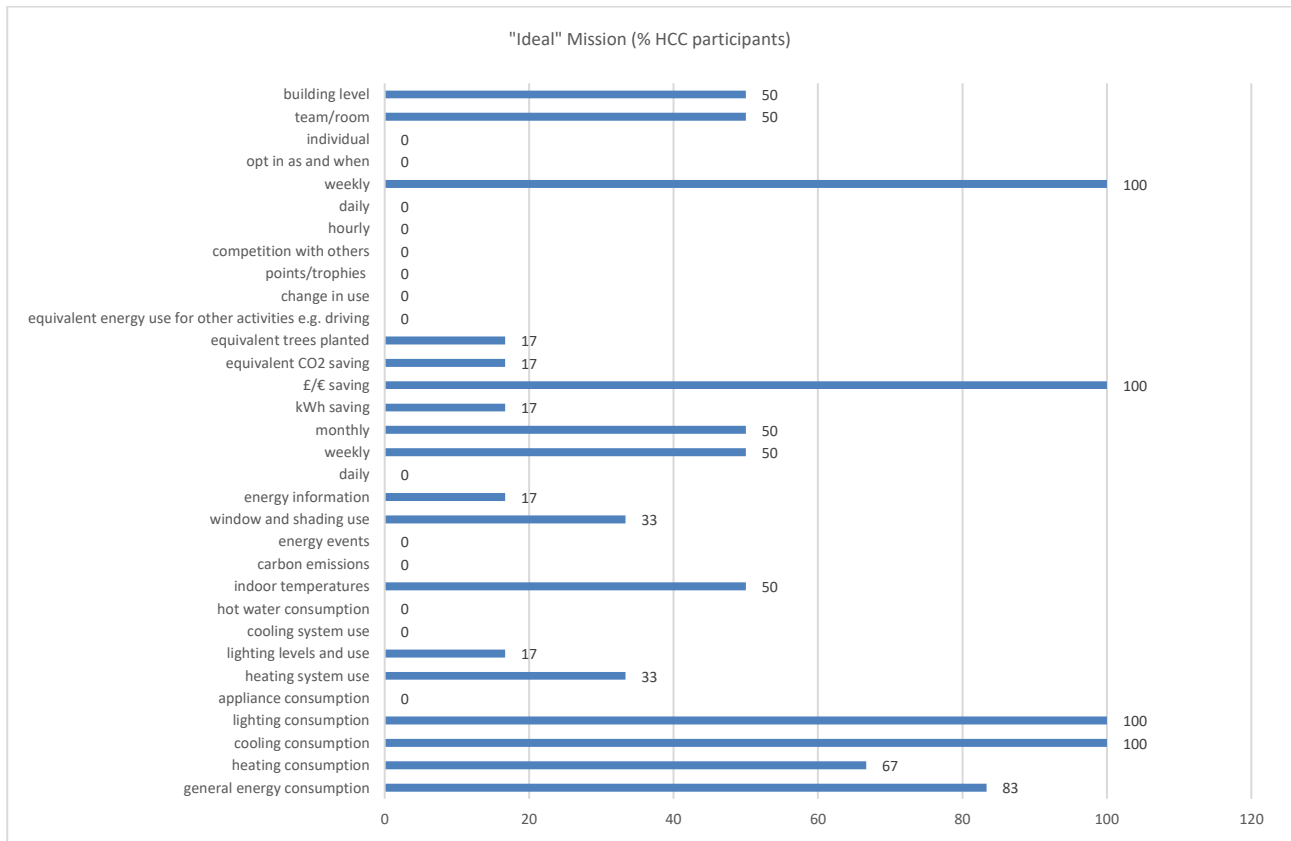


## 11 Appendix - “Ideal” Missions by building typologies









## 12 References

Morton, A., Reeves, A. and Bull, R. (2018). Analysis of end-user behaviour in relation to case study buildings. Deliverable 1.2 of the eTEACHER project funded under the European Union's Horizon 2020 research and innovation programme GA No: 768738. Brussels: eTEACHER consortium.

Preston, S. (2018). ICT-based engagement for energy efficiency in buildings. Deliverable 1.3 of the eTEACHER project funded under the European Union's Horizon 2020 research and innovation programme GA No: 768738. Brussels: eTEACHER consortium.

Reeves, A., Morton, A. and Bull, R. (2018). Applying "Enabling Change" to eTEACHER. Deliverable 1.4 of the eTEACHER project funded under the European Union's Horizon 2020 research and innovation programme GA No: 768738. Brussels: eTEACHER consortium.

Robinson, L. (2012). *Changeology*. Totnes, Devon: Green Books.

Robinson, L. (2018). *Enabling Change Website*. [Online] Available at: <http://enablingchange.com> [Accessed 01.9.18]

