



Save the Homes

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1 Executive Summary

Save the Homes deliverable D3.9 on Ethics manual for the two pilots, is due at the end of October 2021. This manual will specify which data is essential for the project and which should be excluded from retention and will merge the partners' or national existing ethical test protocols.

The Save the Homes consortium is aware of the ethical, privacy and data protection issues which could be raised by the activities performed as part of the project scope, since it involves data collection and a set of pilots at different European locations with monitored data and interaction with building users in residential buildings. Furthermore, in compliance with the new European Commission's directive 2016/679 (The General Data Protection Regulation (GDPR)) and 2016/680 (The Data Protection Law Enforcement Directive) of the European Parliament about the protection of natural persons, an extended Ethical research was recommended in an effort to cover possible ethical issues, so that the outcome and all process would abide with the EU ethical rules.

This document is intended to draw some initial observations and recommendations to establish guidance for best practice and ground rules outlining a framework for ethics advisor and/or advisory board within the project. There is still a great deal to be done and it is proposed that these suggestions are taken further and aired more fully with all stakeholder representatives. Meeting the challenge of making the EU the most competitive and dynamic knowledge economy in the world requires that innovative research be funded, but it is precisely such research that may pose the most complex ethical challenges.



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2 Introduction

Data protection is both a central issue for research ethics in Europe and a fundamental human right. It is intimately linked to autonomy and human dignity, and the principle that everyone should be valued and respected. For this principle to guide the development of today's information society, data protection must be rigorously applied by the research community. The right to data protection is preserved in the EU Charter of Fundamental Rights and the Treaty on the Functioning of the European Union, which give effect to individuals' right to privacy by providing them with control over the way information about them is collected and used¹.

In research settings, data protection imposes obligations on researchers to provide research subjects with detailed information about what will happen to the personal data that they collect. It also requires the organizations processing the data to ensure the data are properly protected, minimized, and destroyed when no longer needed. Depending on the setting or information in question, the failure to protect personal data against loss or misuse can have devastating consequences for the data subjects. It may also have serious legal, reputational and financial consequences for the data controller and/or processor².

Many recent examples of unethical research practices have involved the unauthorized collection and/or (mis)use of personal data, resulting in enforcement action by regulators. While individual EU-funded research projects processing personal data must comply with EU and national data protection laws, the objective of this guidance note is to ensure that, in addition to respecting legal obligations, all projects are guided by ethical considerations and the values and principles on which the EU is founded.

Particular attention should be paid to research involving special categories of data (formerly known as 'sensitive data'), profiling, automated decision-making, data-mining techniques, big-data analytics and artificial intelligence, as such processing operations may pose higher risks to the rights and freedoms of data subjects. The increasing impact of these and other new technologies on our everyday lives and activity is reflected in the letter and spirit of the EU's 2016 General Data Protection Regulation (GDPR). While the EU's ethics review process is primarily concerned with ethics issues, your project must demonstrate compliance with the GDPR. However, the fact that your research is legally permissible does not necessarily mean that it will be deemed ethical.

Crucially, because the Save the Homes project involves the processing of personal data, whatever method is used, project partners, collaborators and service providers must be able to demonstrate compliance with both legal and ethical requirements.

Such requests could come from data subjects, funding agencies or data protection supervisory authorities. All EU projects processing personal information about identifiable human research subjects are subject to the GDPR. The principle of accountability is central to the GDPR and requires data processors to establish and document data protection compliance processes. In addition to the GDPR, national legislation or related EU measures could also apply, that might be considered.

¹ Article 8, EU Charter of Fundamental Rights.

² Regulators may impose fines of up to €20 million or 4 % of the global turnover of the entity (whichever is higher).



2.1 Key issues, concepts and definitions

2.1.1 General GDPR Compliance

- **'Personal data'** are defined extremely broadly and include 'any information relating to an identified or identifiable natural person'. An 'identifiable natural person', or 'data subject', is 'one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person' (Article 4(1) GDPR). Personal data include data such as internet protocol (IP) addresses (unique identifiers that can be used to identify the owner of devices connected to the internet) and data from 'smart meters' monitoring energy usage by addresses linked to identifiable persons.
- **'Special categories of personal data'** (formerly known as 'sensitive data') are subject to more stringent data-protection safeguards. They include 'personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation' (Article 9(1) GDPR). If your project involves the processing of special categories of data, it is more likely to raise significant ethics issues. You must therefore justify the inclusion of this kind of data in your project.
- The definition of **'data processing'** is very broad. It includes 'any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction' (Article 4(2) GDPR). It is highly likely that if your project involves any data about identifiable persons, even if they are not directly participating in the research, you are processing personal data and must comply with EU and national law.

Only data that have been fully and irreversibly **anonymised** are exempt from these requirements. Importantly, while **pseudonymisation** can provide individual data subjects with a degree of protection and anonymity, pseudonymised data still fall within the scope of personal data because it is possible to re-identify the data subject (see below). Even if your project is using only anonymised data, the origin or acquisition of the data may still raise significant ethics issues.

- Pseudonymisation entails substituting personally identifiable information (such as an individual's name) with a unique identifier that is not connected to their real-world identity, using techniques such as coding or hashing. However, if it is possible to re-identify the individual data subjects by reversing the pseudonymisation process, data protection obligations still apply. They cease to apply only when the data are fully and irreversibly anonymised.
- Anonymisation involves techniques that can be used to convert personal data into anonymised data. Anonymisation is increasingly challenging because of the potential for re-identification.
- Re-identification is the process of turning pseudonymised or anonymised data back into personal data by means of data matching or similar techniques.

The GDPR places obligations on both:

- the **'data controller'**, which 'alone, or jointly with others, determines the purposes and means of the processing of personal data'; and
- the **'data processor'**, which 'processes personal data on behalf of the controller'.



Any partners, contractors or service providers that process research data at the request of the project and on your its behalf must comply with the GDPR and the H2020 ethics standards. Where the project shares with consortium partners the responsibility for processing personal data collected in the course of your research project, your project may have joint data controllers. In this case, project partners must set out your respective responsibilities in an agreement available to data subjects and provide them with a single point of contact.

2.1.2 Relevant tasks

Below the main tasks are stated, which are addressing activities with human subjects and personal data collection:

TASK 2.1: DEMAND AND SUPPLY SIDE SEGMENTATION

Where surveys and inquiries will be done to understand the building owners' profiles (household size, age, background, education, literacy, etc.) in order to understand their needs and opportunities for engagement campaigns and several buyer's persona will be created.

TASK 3.7: MONITORING DATA PLAN FOR THE TWO PILOTS

Where a data monitoring plan will define which specific measurements and its measuring protocols should be taken throughout the different stops to obtain data about energy, indoor environmental quality, satisfaction and wellbeing of occupants in all the pilot buildings. Data coming from the monitoring campaigns will be stored in common data management structure that will later on allow harmonized data management, handling and sharing, including data privacy (GDPR compliance).

TASK 4.1: ENGAGEMENT CAMPAIGNS: 'SAVE THE HOMES ON THE MOVE' ELABORATION TO RECRUIT HOMEOWNERS

Where Sav€ the Homes initiative will meet the homeowners in their common places (e.g. supermarket, NextDoor app, regional newspaper, etc.) to encourage homeowners to come to an office for a 'Want to know more' appointment. Or in case a digital office is in place where people leave their (digital) address in relation to their wishes.

TASK 4.5: EVALUATION OF REAL-TIME DATA BEFORE AND AFTER RENOVATION

Where the monitoring plan defined in T3.7 will be followed.

TASK 4.6: DEMONSTRATION AND EVALUATION OF THE SAVE THE HOMES CUSTOMER JOURNEYS FOR THE TWO PILOT CITIES

Where the realization and reporting (satisfaction evaluation) of the Sav€ the Homes customers satisfaction (after work is done; Stop 4 - In-Use phase) will be done.



3 Identifying and addressing ethics issues

All projects that involve the processing of personal data must provide information about the data protection provisions in their proposal.

3.1 Identifying: ethics issues

A project raises higher ethics risks if it involves:

- Processing of ‘special categories’ of personal data (formerly known as ‘sensitive data’)
- processing of personal data concerning children, vulnerable people or people who have not given their consent to participate in the research
- complex processing operations and/or the processing of personal data on a large scale and/or systematic monitoring of a publicly accessible area on a large scale
- data processing techniques that are invasive and deemed to pose a risk to the rights and freedoms of research participants, or techniques that are vulnerable to misuse and
- collecting data outside the EU or transferring personal data collected in the EU to entities in non-EU countries.

In case the project entails higher-risk data processing, partners must provide a detailed analysis of the ethics issues raised by the project methodology. This should comprise:

- an overview of all planned data collection and processing operations
- identification and analysis of the ethics issues that these raises and
- an explanation of how you will mitigate these issues in practice.

At the time of this Manual writing, several issues have been identified, related to: human participants, protection of personal data, and independency of the provided advises.

3.1.1 Humans

When performing a research, two questions are to be considered related to human participation:

- *Does this research involve human participants?*
- *Are they volunteers for social or human sciences research?*

Save the Homes aims to offer One-Stop-Shop (OSS) renovation services to homeowners which will be managed and implemented by municipalities, as being trustworthy entities for citizens. For its design, the project will carry out in WP2 **surveys and inquiries on homeowners to understand their profiles** (household size, age, background, education, literacy, etc.) in order to understand their needs and opportunities for engagement campaigns. Following this, several buyer’s personas will be created (profiling). The project activities also include the performance in WP4 of **engagement campaigns to recruit homeowners** in the two pilot cases (City of Rotterdam and Valencia Region).

The project consortium is aware of the relevant human ethics issues at stake in the proposed work and have addressed them by declaring that all information about the users will be **anonymized** and no information about their behaviour, habits and daily routines will be logged without their knowledge and written consent. Also, an **Informed Consent Statement** example was already provided at the proposing phase of the project to be used for the surveys and is also part of this D3.9.

3.1.2 Protection of personal data

Next question addresses the protection of those human participants regarding the data collected from their participation in the research:

- *Does this research involve personal data collection and/or processing?*

Save the Homes project, during the implementation of its monitoring plan (see T3.7) on the engaged homeowners' homes will obtain, besides the profiling data, energy, indoor environmental quality, satisfaction and well-being of occupants' data before and after renovation. Data coming from the **monitoring** will be stored in a data management structure that will allow harmonized data management, handling and sharing, including data privacy (GDPR compliance).

The project consortium is aware of the relevant data ethics issues at stake in the proposed work and have addressed them by stating that all information about the users will be **anonymized** and no information about their behaviour, habits and daily routines will be logged without their knowledge and written consent. For the storage issues, a **Data Management Plan** addressing ethical issues is delivered in D1.4 at M6, where also anonymisation/pseudonymisation techniques to be implemented are described and kept on file.

Also, since the research involves profiling, an **Informed Consent Statement** must be provided where data subjects will be informed of the existence of the profiling, its possible consequences and how their fundamental rights will be safeguarded.

On the other hand, no **Data Protection Officer (DPO)** is involved in the project in order to help the GA implementation and its full compliance with data privacy rules.

it is not only about the research that is part of the Save the homes project, ethics also counts for when the HUB is up and running. Citizens come there, leave their personal data (household, energy bill, personal difficulties like poverty) and get advice. Who has access to that data and who is allowed to contact the citizen? In an active approach of the HUB, the market is allowed to contact people, but from a GDPR point of view this is not advisable.

3.1.3 Independency

Finally, a wider question needs to be addressed:

- *Are there any other ethics issues that should be taken into consideration?*

In this context, there is a concern about the transparency and independence of the advice provided by commercial services in the publicly funded Citizen Hubs. In this regard, several drivers may jeopardize the independence of the advice offered to homeowners:

- a) Independence of the supply-side package: the consortium has a powerful position in selecting the companies and service providers that will be included as part of the supply side package (as these companies will gain privileged access to the target group of homeowners, with the backing of municipalities). The consortium needs to ensure that the selection procedure is fair and transparent
- b) Independence of the advice to homeowners (both renovation services and financial advice): the consortium needs to ensure that the offer to homeowners represent the best available offer to homeowner, based on fair and balanced information (considering that commercial service providers may prioritise sales, and thus may emphasise the benefits of renovation even if it is not the homeowners most advantageous option).

3.2 Addressing: tools & methods

For addressing identified ethics issues, a set of tools and methods of general use at are the consortium disposal in order to overcome the risk of unethical behaviour.

3.2.1 Pseudonymization & anonymization

One of the best ways to mitigate the ethical concerns arising from the use of personal data is to anonymize them so that they no longer relate to identifiable persons. Data that no longer relate to identifiable persons, such as aggregate and statistical data, or data that have otherwise been rendered anonymous so that the data subject cannot be re-identified, are not personal data and are therefore outside the scope of data protection law.

However, even if Save the Homes plans to use only anonymized datasets, the project activities may still raise significant ethics issues. These could relate to the origins of the data or the way they were obtained. The Save the Homes Ethics Manual will therefore specify the source of the datasets it is intended to use during the project and address any ethics issues that arise. It will also consider the potential for misuse of the research methodology or findings, and the risk of harm to the group or community that the data concern.

Where it is necessary to retain a link between the research subjects and their personal data, wherever possible, Save the Homes will pseudonymize the data in order to protect the data subject's privacy and minimise the risk to their fundamental rights in the event of unauthorized access.

Pseudonymisation and anonymisation are not the same thing and it is important the project consortium is aware of the difference between them, as the GDPR requires to use them wherever possible or feasible (Article 89 GDPR). While anonymised data are no longer considered personal data, anonymisation processes are challenging, particularly where large datasets containing a wide range of personal data are concerned. This is because it is very difficult to create fully anonymous datasets that retain the granular information needed for research purposes.

In Save the Homes, there is a significant prospect of re-identification of persons whose data have been collected, and this information should be treated as personal data. It is however difficult to assess the risk of re-identification with absolute certainty. A growing body of case studies and research publications in which individuals are identified from 'anonymous' datasets has demonstrated the fundamental constraints to anonymisation as a technique to protect the privacy of individuals.

As Save the Homes intends to anonymise the data collected for use in the project, the timing of the anonymisation process is paramount. Save the Homes will be collecting 'anonymised' data as the anonymisation happens at the point and time at which the data are collected from the research subject, so that no personal data are processed. If anonymisation takes place at a later stage, e.g. in case researchers will remove personally identifiable information during the transcription of audio recordings or at the point at which survey data are fed into a database, the raw data are still personal data and the project will include provisions for their protection up until the point at which they are deleted or rendered anonymous.

In some instances, partners might have collected and retain raw datasets from monitoring campaigns containing sensible data, which will be made available to project researchers and partners in anonymised form. In these instances, while the recipients of the anonymised data will – subject to the mitigation of the risk of re-identification – be exempt from data protection requirements, the partner processing personal data and must ensure appropriate protection for the raw (personal) data. This includes technical and organisational measures to protect the data and the means to identify the data subjects (e.g. the keys, codes or applications used to anonymise the data) against unauthorised access or use. If a partner has any doubt as to the adequacy of the technique(s) that intends to use, advice must be asked from the project DPO or a suitably qualified expert. For sensitive or complex processing scenarios involving pseudonymisation or anonymisation, it may even be necessary to conduct a DPIA in order to ensure an appropriate level of data protection and minimise risk to the data subjects' rights.

3.2.2 Identifying potential misuse of research

Although Save the Homes activities are usually carried out with benign intentions, some research involving methods, technologies or generated knowledge could be misused for unethical purposes, if measures to avoid potential misuse are not taken into consideration. Although the risk of misuse of research can never be eliminated, it can be minimised by recognising risks in good time and taking the right precautions.

All H2020-funded projects must avoid such misuse and comply with the numerous international, EU and national laws that address concerns relating to potential misuse of materials, technologies and information. If beneficiaries breach any of their obligations under the Grant Agreement, the grant may be reduced or terminated.

To identify any possible misuse, we start considering the risks associated with the research of Save the Homes that might be used in unethical ways, including the most vulnerable scenarios to misuse in research that:

- provides knowledge, materials and technologies that could be channelled into crime or terrorism
- involves developing surveillance technologies that could curtail human rights and civil liberties
- involves minority or vulnerable groups or develops social, behavioural profiling technologies that could be misused to stigmatize, discriminate against, harass or intimidate people.

There are various ways to mitigate risk. Depending on the specific activity planned and the potential misuse, partners may decide to:

- take additional security measures, e.g. physical security measures, classification of certain deliverables, compulsory security clearance for those involved in the project
- take additional safety measures, e.g. compulsory safety training for staff
- adjust the research design, e.g. use dummy data
- limit dissemination, e.g. by publishing only part of the research results, regulating export, etc.

3.2.3 Data protection by design & default

To innovate ethically and responsibly, researchers and developers have long been encouraged to apply the concept of ‘privacy by design’, which provides a framework for focusing the design of systems, databases and processes on respect for data subjects’ fundamental rights. A wider concept of ‘data protection by design’, now included in the GDPR, requires data controllers to implement appropriate technical and organisational measures to give effect to the GDPR’s core data-protection principles (articles 5 and 25 GDPR). Data protection by design is one of the best ways to address the ethics concerns that arise from your research proposal at the design stage of your project.

In a research and development context, measures to achieve data protection by design could include:

- the pseudonymisation or anonymisation of personal data
- data minimization
- applied cryptography (e.g. encryption and hashing)
- using data-protection focused service providers and storage platforms; and
- arrangements that enable data subjects to exercise their fundamental rights (e.g. as regards direct access to their personal data and consent to its use or transfer).

When considering whether and how to apply the principle of data protection by design, Save the Homes will consider:

- the nature, scope, context and purposes of processing
- the severity of the risks to the data subjects’ fundamental rights should Save the Homes fail to protect information

- the cost and availability of the technologies and applications needed.

Save the Homes will apply the principle of data protection by design where it could mitigate the ethics risks raised by the data processing in your research project and explain how this will be achieved.

This approach is underscored by the principle of ‘data protection by default’. Wherever Save the Homes will have the possibility to enhance the level of data protection afforded, it will apply such measures by default rather than just considering them or making them available as an optional extra. Where the Save the Homes research involves complex, sensitive or large-scale data processing, the Ethics Manual will include a description of the measures will be taken to apply the principles of data protection by design and default, and/or to enhance security so as to prevent unauthorised access to personal data or equipment.

3.2.4 Data minimisation

Data processing must be lawful, fair and transparent. It should involve only data that are necessary and proportionate to achieve the specific task or purpose for which they were collected (Article 5(1) GDPR). Save the Homes will therefore collect only the data that needed to meet the research objectives. Collecting personal data not needed for the specific research project objectives may be deemed unethical and unlawful.

If the project partners are in any doubt as to whether the data intended to collect are ethical, a data minimisation review must be conducted. This should be designed and conducted by the research team to ensure that data are collected on a ‘need to know’ basis, i.e. the data are required for a specific purpose that is relevant and limited to your project’s objectives and methodology.

Data minimisation applies not only to the amount of personal data collected, but also to the extent to which they may be accessed, further processed and/or shared, the purposes for which they are used, and the period for which they are kept. Researchers must minimise the processing as far as possible.

If researchers are unable fully to identify the purpose of the data processing at the time of data collection or you need to keep the data beyond the duration of your project, the data collection and retention arrangements must be explained and justified.

Researcher must also explain how the principles of data minimisation and data protection by design in practice will be applied. In particular, it must be ensured that:

- Data are pseudonymise or anonymise wherever possible
- Data are securely stored
- Where appropriate, policies and procedures are established to limit the use of the data and protect the fundamental rights of the data subjects.

3.2.5 Informed consent to data processing

Informed consent is the cornerstone of research ethics. It requires to explain to research participants what your research is about, what their participation in the project will entail and any risks that may be involved. Only after this information is conveyed to the participants – and they have fully understood it – Save the Homes researchers will seek and obtain their express permission to include them in the project

In principle, living individuals will not be the subject of a Save the Homes research without being informed, even in the cases where research methods, conditions or objectives dictate that they are not made fully aware of the nature of the study until its completion. However, the advent of the internet and the widespread use of social media platforms and other ICTs have dramatically expanded opportunities for researching human behaviour without the express consent of the subjects. In turn, this has created a range of ethical dilemmas and challenges for the research community.

Whenever Save the Homes will collect personal data directly from research participants, an informed consent by means of a procedure that meets the minimum standards of the GDPR will be circulated and signed. This requires consent to be given by a clear affirmative act establishing a freely given, specific, informed and unambiguous indication of the subject's agreement to the processing of their personal data. This may take the form of a written statement, which may be collected by electronic means, or an oral statement.

Wherever possible, this process will be integrated into a broader informed consent procedure that meets the standards set out in the Commission's Guidance note on informed consent. However, because Save the Homes is involving particularly complex and sensitive data-processing operations, partially including methods such as behavioural profiling, audio/video recording or geo-location tracking, Save the Homes will implement a specific informed consent process covering the data-processing component of the project.

Researchers will keep records documenting the informed consent procedure, including the information sheets and consent forms provided to research participants, and the acquisition of their consent to data processing, as these may be requested by data subjects, funding agencies or data protection supervisory authorities.

For consent to data processing to be 'informed', the data subject will be provided with detailed information about the envisaged data processing in an intelligible and easily accessible form, using clear and plain language. As a minimum, this should include:

- the identity of the data controller and, where applicable, the contact details of the DPO
- the specific purpose(s) of the processing for which the personal data will be used
- the subject's rights as guaranteed by the GDPR and the EU Charter of Fundamental Rights, in particular the right to withdraw consent or access their data, the procedures to follow should they wish to do so, and the right to lodge a complaint with a supervisory authority
- information as to whether data will be shared with or transferred to third parties and for what purposes and
- how long the data will be retained before they are destroyed.

The data subjects will also be made aware in case the data are to be used for any other purposes, shared multiple projects or for purposes other than the Save the Homes specific research. In that case, the data subjects will be given the opportunity to opt out of the further processing operation(s).

If in the course of your research project researchers need to make any significant changes to the methodology or processing arrangements that have a bearing on the data subjects' rights or the use of their data, data subjects must be made aware of the intended changes, and seek and obtain their express consent. As it is not enough to offer them the opportunity to opt out, this will be done before the changes are made.

The consent process(es) and the information given to the data subjects will cover all the data-processing activities related to their participation in the research. From a research ethics perspective, and in accordance with the principles of fair and transparent data processing, if project participants intend to use or make their data available for future research projects, it is best practice to obtain their additional, explicit consent to the secondary use of the data.

3.2.6 Collecting data on children

All research involving children and young people raises significant ethics issues, as they may be less aware of the risks and consequences of their participation. This is also true as regards the processing of personal data.

In case Save the Homes will involve collecting data from children, researchers must follow the EC Guidance note on informed consent, in particular the provisions on obtaining the consent of a

parent/legal representative and, where appropriate, the assent of the child. As that guidance makes clear, it is imperative that any information you address to a child is in age-appropriate and plain language that they can easily understand. Researchers must also apply the principle of protection by design to research data concerning children and minimise the collection and processing of their data as far as possible.

The GDPR establishes special safeguards for children in relation to ‘information society services’, a broad term covering all internet service providers, including social media platforms. These include a requirement for verified parental consent in respect of information society services offered directly to children aged under 16. Individual Member States may provide for this threshold to be lowered to 13. In case Save the Homes will be collecting data from children using ICTs (e.g. from social media platforms or apps), researchers will ensure to observe the national and EU law safeguards and explain how the parent/legal representative’s consent is you obtained and verified.

3.2.7 Use of previously collected data (‘secondary use’)

As noted above, some of the most high-profile breaches of ethics standards have concerned the use of data collected for one purpose and then used for other research or targeting processes, without the knowledge or consent of the data subject. In case Save the Homes will be processing personal data without the express consent of the data subjects, it will be explained how data are obtained, and justify their use in the project to ensure that the processing is fair to the data subject.

If the collection or use of data raises specific ethics issues (e.g. as regards consent and transparency, privacy and the rights and expectations of the data subjects), the Ethics report will provide a detailed overview of the planned data collection and processing operations and explain how the ethics concerns will be mitigated.

In case Save the Homes will be using data that are publicly available, the project will provide details of the source(s) and confirm that the data are openly and publicly accessible and may be used for research purposes, also in the case the data have been manifestly made public by the data subject.

- Using ‘**open source**’ data: The fact that some data are publicly available does not mean that there are no limits to their use. On the contrary, in case ‘open source’ personal data about identifiable persons are taken to create new records or files/profiles, personal data about them are being processed and must have a lawful/legitimate basis for doing so. Save the Homes will ensure that the data processing is fair to the data subject and that their fundamental rights are respected. In case Save the Homes will use data from social media networks and you do not intend to seek the data subjects’ explicit consent to the use of their data, it must be assess whether those persons actually intended to make their information public (e.g. in the light of the privacy settings or limited audience to which the data were made available). As a matter of fact, it is not enough that the data are accessible; they must have been made public to the extent that the data subjects do not have any reasonable expectation of privacy. Save the Homes must also ensure that the intended use of the data complies with any terms and conditions published by the data controller.

If Save the Homes intends to use personal data that were collected from a previous research project, details regarding the initial data collection, methodology and informed consent procedure will be provided. The researchers will also confirm to have permission from the owner/manager of the dataset(s) to use the data in the project.

In principle, in case Save the Homes will be using personal data provided by a third party and the data subjects have not expressly consented to its use the projects, researchers will, in accordance with the GDPR, inform them that you have acquired the data and what you will be using them for (art.14 GDPR). Data providers will also have provided them with the same basic information about the data processing and their rights

3.2.8 Deletion and archiving of data

Save the Homes may keep the personal data collected only as long as it necessary for the purposes for which they were collected, or in accordance with the established auditing, archiving or retention provisions for your project. These must be explained to the research participants in accordance with informed consent procedures. Recent high-profile cases involving the misuse of personal data have stemmed from data controllers' failure to delete personal data and ensure that third parties to whom the data were provided had done the same in accordance with the agreed terms of their use.

As soon as the research data are no longer needed, or subject to an established retention period, Save the Homes will securely delete the data in their entirety and make sure that they cannot be recovered. Data retained for auditing processes should be stored securely and further processed for those purposes only.

If research data are held in the cloud or by a third-party service provider, Save the Homes will ensure that it has securely deleted the data together with any back-ups. If data have been shared with partners or transferred to third parties in the course of your project, researchers must ensure that they have deleted the data, unless they have a legitimate basis for retaining them.

3.2.9 The Ethics Advisor (EA)/ Ethics Advisory Board (EAB).

"Ethics Advisory Board" (EAB) or "Ethics Advisor" (EA) is defined in the DG Research and Innovation Guidance Document as "a group of ethics experts or an individual ethics expert giving advice to a researcher, research group or project consortium partners in the context of an EC-funded project". Such a provision become a contractual obligation for the H2020 applicants/beneficiaries, that are asked to include a mandatory work package on Ethics as part of the original research proposal and thereby become included in the Description of Work (DOW). The work of these experts should facilitate, build upon and complement existing oversight regimes by competent ethical and legal authorities.

The EC perceives 'ethics' as including questions of legal and regulatory compliance as well as a branch of philosophy. In this perspective, the EC Document refers to ethics guidance as "a comprehensive strategy on how to minimize research misconduct and the potential misuse of research in EU funded research" and asserts that ethics is a "key oversight mechanism to ensure that EU funded research is not misused".

The challenge addressed in this document is to position EAs and the EABs so as to be part of an ethical assurance strategy. The consideration of ethical issues in EC-funded projects enhances the quality of research, increases its likely social impact, promotes research integrity, a better alignment of research with social needs and expectations and, finally, supports the societal uptake of the fruits of research because high ethical standards generally merit public trust.

Ethics advice will be incorporated into the project Description of Actions (DoA), either as part of a dedicated Work Package (i.e. WP7) and so contained in the original proposal, or can depend on the nomination of an EA or EAB. In some cases, consultation with ethics advisors can be on a voluntary basis, in other cases consultation becomes mandatory. The specific advisory 'form' can depend upon the following factors among others:

- Anticipated seriousness of potential risks
- The size of the project and, therefore, the multiple issues it raises
- Already existing legal and ethical oversight structures
- The maturity of the proposal

The advisory role is a proactive one. The cultivation of mutual understanding between advisors and partners can see differences resolved through diplomacy and clear communications. Problems can be



forestalled through cooperative effort and a culture of collaborative working. Serving as an Ethics Advisor on a EU-funded project is a very challenging and demanding job and requires a great deal of dedication, experience, commitment and enthusiasm. It is essential to master the details of the research, keep up to date with the latest developments in the field whilst at the same time keeping pace with developments in the ethical opinions and legislation.

When seeking to formulate good practices in the area of ethics the uncertainty that often surrounds emerging, innovative science that may give rise to further aspects of ethics uncertainty. It is thus suggested that a strong focus should be on developing procedures for deciding what should be done, applying the principles of participation, procedural justice, responsible stewardship, accountability, transparency, effectiveness, and coherence.



4 Ethics Manual

In this chapter are defined key the areas of ethical compliance within the project development.

4.1 Ethics Advisor, Advisory Board & compliance check

The Save the Homes Ethical Board is formed in order to ensure and revise ethics compliance within the project. This board consists of the coordinator (HIA), the user representative partner (IVE) and the relevant WP/Tasks Leaders (WP2 on mapping – IVE, WP3 on the tasks related to monitoring – GNE & IVE, and WP4 related to actual demonstration pilots – BGH). During the 4th consortium meeting, an ‘external expert’ not directly involved in this project and therefore acting as ‘neutral’ partner will lead an Ethics compliance workshop to review the main research activities related to ethics in order to ensure the compliance and control with the main ethical principles and standards.

Every year HIA (coordinator) and IVE (acting as users’ representative) will do an assessment of the ethics, with specific focus on ensuring ethics compliance at the pilots (engagement through pilot representatives). Partner IVE is responsible for ethics compliance within WP2 & 3, and BHG within WP4. Hence, HIA and IVE are responsible for overseeing these ethics procedures applied in WP2, WP3 & WP4. All partners will take part in this ethics assessment as it covers all the project areas.

4.2 Pilot evaluation ‘on the field’

The Save the Homes demonstration will cover the residential environment. The engagement of the building occupants (owners, tenants) will take place in the project from the early beginning and thus special concerns about Save the Homes ethics are handled in this document.

When dealing with the human subjects at the demonstration cases, the Save the Homes research must comply with:

- ethical principles
- applicable international, EU and national law.

This implies that the consortium must ensure respect for people and for human dignity and fair distribution of the benefits and burden of research, and that the values, rights and interests of the research participants must be protected.

Final selection of different zones will be concluded after a thorough survey of the buildings suitable for demonstration by corresponding consortium partners and under the supervision of the Project Coordinator. Furthermore, the selection will be based on a set of ethical and privacy principles, in conformance with respective laws and ethics deontology.

4.2.1 Human Beings in Research

The following section refers to the Save the Homes research activities that are involving work with human beings (‘research or study participants’), regardless of its nature or topic (e.g.: personal data, interviews, observations, tracking or the secondary use of information provided for other purposes etc.). Here, the EC H2020 guide ‘[How to complete your ethics self-assessment](#)’ was followed, in particular *Chapter 2 Human beings*. The [H2020 Guide](#), recommends using the following Ethics Checklist:



HUMANS		YES/ NO		Information to be provided	Documents to be provided/kept on file
Does your research involve human participants?		<input type="checkbox"/>	<input type="checkbox"/>	1) Confirm that informed consent has been obtained.	1) Informed Consent Forms + Information Sheets.
If YES:	- Are they volunteers for social or human sciences research?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details of the recruitment, inclusion and exclusion criteria and informed consent procedures.	1) Copies of ethics approvals (if required).
	- Are they persons unable to give informed consent (including children/minors)?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details of the procedures for obtaining approval from the guardian/legal representative and the agreement of the children or other minors. 2) What steps will you take to ensure that participants are not subjected to any form of coercion?	1) Copies of ethics approvals.
	- Are they vulnerable individuals or groups?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details of the type of vulnerability. 2) Details of the recruitment, inclusion and exclusion criteria and informed consent procedures. These must demonstrate appropriate efforts to ensure fully informed understanding of the implications of participation.	1) Copies of ethics approvals.
	- Are they children/minors?	<input type="checkbox"/>	<input type="checkbox"/>	1) Details of the age range. 2) What are your assent	1) Copies of ethics approvals.

Table 1.- Human beings ethics checklist

4.2.2 Monitoring and control infrastructures

To test that SAVE THE HOMES approach and proposed solutions, the project will cover different demonstration sites in 2 European countries. This will include renovation of existing social and private housing that are occupied by people.

Given this, it is essential to protect the rights and the privacy of all the participants. To that end, this Ethics Manual has been composed including all the necessary ethical and privacy guidelines in order to inform all involved parties towards preserving the privacy of the user, protecting his/her private data and limiting the risk of interception to the minimum. This document will be constantly updated throughout the whole duration of the project.

In principle, the project will gather building related data (energy performance, IEQ parameters measurements), however, surveys will be given to people to also assess their satisfaction and gather their feedbacks (user perception). As part of the monitoring protocol development, the preparation of the 'procedure that need to be followed to collect data' will also address the compliance with all relevant ethical principles. Needless to say, only the data needed to achieve the set objectives and project results will be gathered.

To ensure compliance with both the GDPR and contractual obligations under the Grant Agreement, it will be ensured that information given to the data subjects (i.e. in the data protection notices):

- is in line with the data retention period mentioned in Article 18.1 of the Grant Agreement for the relevant personal data; and
- consortium clearly identify relevant European Commission and Agency staff in charge of the management of EU funded grants and their contractors for ex-post controls as potential recipients of this personal data.

Personal data will be processed in accordance with certain principles and conditions that aim to limit the negative impact on the persons concerned and ensure fairness, transparency and accountability of the data processing, data quality and confidentiality. The following details will be ensured:

- Details of the technical and organisational measures to safeguard the rights of the research participants;
- Details of the informed consent procedures;
- Details of the security measures to prevent unauthorised access to personal data in respect to 'data minimisation' principle';
- Details of the anonymisation /pseudonymisation techniques;
- Details of the data transfers (related to GDPR compliance with Save the Homes ICT system).

It will be clearly described the security measured implemented in the ICT architecture to prevent unauthorised access to personal data gathered via SAVE THE HOMES system.

For the need of the pilot realization and assessment, a set of data is required, namely: the size of building/apartment, the number of users in premises, the type of activities performed and total energy consumption data (at a minimum: monthly level).

4.2.3 Legislation

The Save the Homes project must abide by the ethical rules of the EU, and due to the fact that the pilots are going to take place in different countries, by the respective legislation of the respective countries. More specifically, the legislation that has to conform with is:

- European Union – Directives 95/46/EC & 2002/58/EC & new GDPR legislation
- The Netherlands – AVG Algemene verordening gegevensbescherming (AVG), based on EU directive GDPR
- Spain – Organic Law 3/2018, Protection of Personal Data and guarantee of digital rights

4.3 Informed consent

The Save the Homes Informed Consent Forms will consist of two parts.

- Part I: information Sheet (sharing detailed information about the research with the data subject)
- Part II: Certificate of Consent (the signatures if the data subject agrees to take part).

For each demonstration case free and fully informed consents of the research participants will be gathered. It will be assessed if ethics approvals are required and are necessary.

Participation will be entirely voluntary, and clearly document participants' informed consents must be obtained in advance. No consent is required if national law provides for an exception (e.g. in the public interest).

Participants must be given an informed consent form and detailed information sheets that:

- are written in a language and in terms they can fully understand describe the aims, methods and implications of the research, the nature of the participation and any benefits, risks or discomfort that might ensue explicitly state that participation is voluntary and that anyone has the right to refuse to participate and to withdraw their participation, samples or data at any time — without any consequences
- state how biological samples and data will be collected, protected during the project and either destroyed or reused subsequently state what procedures will be implemented in the event of unexpected or incidental findings (in particular, whether the participants have the right to know, or not to know, about any such findings).
- ensure that potential participants have fully understood the information and do not feel pressured or coerced into giving consent. Participants must normally give their consent in writing (e.g. by signing the informed consent form and information sheets).
- If consent cannot be given in writing, for example because of illiteracy, non-written consent must be formally documented and independently witnessed.

When approaching people to volunteer in SAVE THE HOMES demonstration phase, vulnerable categories of individuals will be avoided (children or other persons unable to give consent). However, if this will be inevitable, then the procedures as defined in Table 1 should be followed.

When research is involving children (or other persons unable to give consent, e.g. certain elderly populations, persons judged as lacking mental capacity) the consortium will obtain informed consent from the legally authorised representative and ensure that they have sufficient information to enable them to provide this on behalf and in the best interests of the participants. Whenever possible, the assent of the participants should be obtained in addition to the consent of the parents or legal representatives. Participants must be asked for consent if they reach the age of majority in the course.

The consortium should also pay attention to ensure that the Save the Homes research methodologies do not result in discriminatory practices or unfair treatment. In addition, when conducting surveys, interviews or focus groups where personal information is gathered and stored, special attention will be paid to:

- Privacy;
- Data protection;
- Data management (see also [section 4](#), H2020 Guide);
- The health and safety of participants (see [section 7.2](#), H2020 Guide).

4.4 Personal Data management

This section concerns research which involves processing of personal data, regardless of the method used (e.g. interviews, questionnaires, direct online retrieval etc.).

Personal Data must be:

- Processed fairly and lawfully;
- Collected for specified, explicit and legitimate purposes and not further processed in a way incompatible with those purposes. Further processing of data for historical, statistical or scientific



purposes shall not be considered as incompatible provided that Government provides appropriate safeguards;

- Adequate, relevant and not excessive in relation to the purposes for which they are collected and/or further processed;
- Accurate and, where necessary, kept up to date; every reasonable step must be taken to ensure that data which are inaccurate or incomplete, having regard to the purposes for which they were collected or for which they are further processed, are erased or rectified;
- Kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data were collected or for which they are further processed. Within the project, anonymization of personal data will be considered as the goal is the analysis over business roles and processes (user specific profiles will not be considered in the project).
- Processed in a manner that ensures appropriate security of the personal data, including protection against unauthorised or unlawful processing and against accidental loss, destruction or damage, using appropriate technical or organisational measures ('integrity and confidentiality').

4.4.1 Acquisition and storage of human related information

The **pilot tests supervisor** should inform the participants with clarity about the procedure of the pilot tests, the system operation and the objectives, the data retrieval and storage and the exact dates the tests will be running. The following rules must be observed:

- No sensitive personal data should be collected. In no case more personal data should be collected than the necessary ones, according to the requirements of European and National legislation.
- No personal data should be centrally stored, but they should be scrambled/anonymized where possible and abstracted in a way that will not affect the final project outcome.
- No data should be collected without the explicit written consent of the occupants under observation (group-based and individual scenarios).
- No data collected should be sold or used for any purposes other than the current project.
- A data minimization policy should be adopted at all levels of the project. This will ensure that no data which is not strictly necessary to the completion of the current study will be collected.
- Any shadow (ancillary) personal data obtained during the course of the research should be immediately cancelled. However, this kind of ancillary data should be minimized as much as possible. Special attention should also be paid to complying with the Council of Europe's Recommendation R(87)15 on the processing of personal data for police purposes, Art.2 :
- The burden for enrolled subjects should not be superior to that imposed by participation in standard market research.
- The research to be conducted should be in full compliance with the principles and guidelines of ethics for research projects in Horizon 2020 framework.

The section 4 of the [H2020 Guide](#), recommends using the following Ethics Checklist:



PROTECTION OF PERSONAL DATA		YES/NO		Information to be provided	Documents to be provided/kept on file
Does your research involve processing of personal data?		<input type="checkbox"/>	<input type="checkbox"/>	<p>1) Details of the technical and organisational measures to safeguard the rights of the research participants. For instance:</p> <p>For organisations that must appoint a DPO under the GDPR: Involvement of the data protection officer (DPO) and disclosure of the contact details to the research participants.</p> <p>For all other organisations: Details of the data protection policy for the project (i.e. project-specific, not general).</p> <p>2) Details of the informed consent procedures.</p> <p>3) Details of the security measures to prevent unauthorised access to personal data.</p> <p>4) How is all of the processed data relevant and limited to the purposes of the project ('data minimisation' principle)? Explain.</p> <p>5) Details of the anonymisation /pseudonymisation techniques.</p> <p>6) Justification of why research data will not be anonymised/ pseudonymised (if relevant).</p> <p>7) Details of the data transfers (type of data transferred and country to which it is transferred – for both EU and non-EU countries).</p>	1) Informed Consent Forms + Information Sheets used (if relevant).
If YES:	- Does it involve the processing of special categories of personal data (e.g. genetic, health, sexual lifestyle,	<input type="checkbox"/>	<input type="checkbox"/>	<p>1) Justification for the processing of special categories of personal data.</p> <p>2) Why can the research objectives not be reached by processing anonymised/ pseudonymised data (if applicable)?</p>	

Table 2.- Protection of personal data ethics checklist



4.4.2 Collection of data from participants

The **pilot leader** or his/her representative must provide participants from whom data related to themselves are collected with at least the following information, except where he/she already has it:

- the identity of the controller and of his/her representative, if any;
- the purposes of the processing for which the data are intended;
- any further information such as:
 - the recipients or categories of recipients of the data,
 - whether replies to the questions are obligatory or voluntary, as well as the possible consequences of failure to reply,
 - the existence of the right of access to and the right to rectify the data concerning them in so far as such further information is necessary, having regard to the specific circumstances in which the data are collected, to guarantee fair processing.

Overall, derived from the GDPR regulation ((EU) 2016/679) Save the Homes commits to perform a clear process towards managing any possible ethical concerns related to Data Management, namely.

- The research to be conducted will be carried out in full compliance with the principles and guidelines of the Save the Homes Grant Agreement, Article 34 on Ethics and Research Integrity.
- Save the Homes will assign dedicated “Data Controllers” and “Data Processors” as soon as the scenarios are clear and name them personally.

The **Data Controller** of each demonstrator must:

- guaranty that the collected data will be only used for the purposes of the project and they will not be sold or used for other activities.
- guaranty that no personal or sensitive data will be centrally stored. In addition, data will be scrambled where possible and abstracted in a way that will not affect the final project outcome.
- guaranty that no data collected will be sold or used for any purposes other than the current project
- guaranty that any personal data obtained during the course of the research will be immediately cancelled. However, the plan is to minimize this kind ancillary data as much as possible. In particular the names of the research participants will not be made public and their participation will not be communicated to. Any incidental findings will be kept strictly confidential and erased from files under request from the enrolled subject.
- inform the participants about all data that will be collected and the purpose of that;
- provide their personal contact data to the participants and will be available to further explanation on the data collection and management;
- implement appropriate technical and organizational measures (e.g. PET technologies) to protect personal data against accidental or unlawful destruction or accidental loss, alteration, unauthorized disclosure or access, in particular where the processing involves the transmission of data over a network, and against all other unlawful forms of processing
- ensure that no data will be collected without the explicit written consent of the participants
- describe the way the data is supposed to be handled in a detailed way and set the consent forms for the end users to participate in the demonstrator.

Data Processors will ensure that:

- Collected data will be saved on secured servers,
- will not be available to anyone outside the Project’s team;
- collected data will be destroyed as soon as it is allowed by the EU regulation about H2020 projects.

4.4.3 Installation of Sensors & Notifications

The controller of the study or his/her representative, if any, must notify the supervisory authority before carrying out any data collection process. The information to be given in the notification shall include at least:

- the name and address of the controller and of his/her representative, if any;
- the purpose or purposes of the processing;
- a description of the category or categories of data subject and of the data or categories of data relating to them;
- the recipients or categories of recipient to whom the data might be disclosed;
- a general description allowing a preliminary assessment to be made of the appropriateness of the measures taken to ensure security of processing.
- Only aggregated information should be extracted when doing comparison per area. No individual data should be gathered or analysed. The total apartment/building consumption and overall room climate data will be gathered and further analyzed towards baseline definition.
- All personnel working in the selected pilot sites should have been notified on the project's objectives, the pilot duration, the test procedures, and the type of process to be performed over energy consumption data.
- In case one or more people in the selected apartment refuse to participate in the group-based scenarios, the responsible partner for pilot audits along with the project coordinator will decide on excluding/substituting this apartment with one with similar characteristics.

4.4.4 Data Confidentiality and Security

Once data has been collected, confidentiality and security must be ensured:

- Any person acting under the authority of the pilot controller or of the data processor, including the processor himself/herself, who has access to personal data must not process them except on instructions from the controller, unless he/she is required to do so by law.
- The controller must implement appropriate technical and organizational measures (e.g. PET technologies) to protect personal data against accidental or unlawful destruction or accidental loss, alteration, unauthorized disclosure or access, in particular where the processing involves the transmission of data over a network, and against all other unlawful forms of processing.
- Having regard to the state of the art and the cost of their implementation, such measures shall ensure a level of security appropriate to the risks represented by the processing and the nature of the data to be protected. The carrying out of processing by way of a processor must be governed by a contract or legal act binding the processor to the controller and stipulating in particular that:
 - the processor shall act only on instructions from the controller,
 - the obligations, as defined by the Governments laws in which the processor is established, shall also be incumbent on the processor.

The regulation provides specific suggestions for what kinds of security actions might be considered "appropriate to the risk," including:

- The pseudonymisation and/or encryption of personal data.
- The ability to ensure the ongoing confidentiality, integrity, availability and resilience of systems and services processing personal data.
- The ability to restore the availability and access to data in a timely manner in the event of a physical or technical incident.
- A process for regularly testing, assessing and evaluating the effectiveness of technical and organizational measures for ensuring the security of the processing.

Especially for pseudonymisation, we are adopting the principles of the new GDPR legislation towards keeping the de-identified data (tokenized datasets) separately from the “additional information,” then the GDPR permits data handlers to use personal data more liberally without fear of infringing the rights of data subjects. This is because the data only becomes identifiable when both elements are held together.

4.4.5 Rights of Participants

Taking into account the most recent legislation, the information that must be made available to a Data Subject when data is collected has been strongly defined and includes:

- the identity and the contact details of the controller and Data Protection Officer DPO (if needed);
- the purposes of the processing for which the personal data are intended;
- the legal basis of the processing;
- where applicable, the recipients or categories of recipients of the personal data;
- the period for which the personal data will be stored, or if this is not possible, the criteria used to determine this period;
- the existence of the right to access, rectify or erase the personal data;
- the right to data portability;
- the right to withdraw consent at any time;
- and the right to lodge a complaint to a supervisory authority.

Overall,

- Participants will have the right to access their personal data as well as their extracted parameters.
- Participants will be able to quit the monitoring data at any point, if they wish, without any consequences.
- Participants will enrol the pilot tests as part of their daily activities, as no further work is requested for their participation in Save the Homes Project.

The right to Obtain

Every participant has the Right to obtain from the pilot representative without constraint at reasonable intervals and without excessive delay or expense:

- Confirmation as to whether or not data relating to him/her are being processed and information at least as to the purposes of the processing, the categories of data concerned, and the recipients or categories of recipients to whom the data are disclosed,
- Communication to him/her in an intelligible form of the data undergoing processing and of any available information as to their source,
- Knowledge of the logic involved in any automatic processing of data concerning him/her;
- As appropriate the rectification, erasure or blocking of data the processing of which does not comply with the provisions of this Manual, in particular because of the incomplete or inaccurate nature of the data;
- notification to third parties to whom the data have been disclosed of any rectification, erasure or blocking, unless this proves impossible or involves a disproportionate effort.

The right to Object

The participant has the Right to Object:

- at any time on compelling legitimate grounds relating to his/her particular situation to the processing of data relating to him/her, save where otherwise provided by national legislation. Where there is a justified objection, the processing instigated by the pilot controller may no longer involve those data;



- to object, on request and free of charge, to the processing of personal data relating to him/her which the pilot controller anticipates being processed for the purposes of direct marketing, or to be informed before personal data are disclosed for the first time to third parties or used on their behalf for the purposes of direct marketing, and to be expressly offered the right to object free of charge to such disclosures or uses.

4.5 Independency and Transparency of services provided through the Citizen Hubs

On one hand, for independency, the Citizen hub will not choose the supplier. It will help and support the applicant's decision-making process by explaining the different criteria on which they could rely and showing or demonstrating the different tools available to assess the offers they will receive.

Then, for public concurrence and competence assurance, we've drafted a three levels system:

- A Contractors' Register, based on their technical and economic solvency and acting capacity, where they'll be classified in different levels. As a first step, the project pretends to replicate this kind of Register for building administrators, architects and other professionals involved in the renovation value chain, in order to have an objective system of qualification available. All the professionals will be invited to register.
- Toolbox with several functionalities:
 - A section of the platform will be created to enable users to publish their needs for professionals or services
 - Files and formats will be provided to professionals (suppliers) applying for an offer, in order to enable data comparability. The use of this templates will be mandatory to apply.
 - Scales and evaluation protocols will be provided to building owners and/or administrators, in order to harmonize the evaluation procedure
 - Consult and filtering tools will be available for dwellings owners and occupants, in order to verify the decision made
 - All stakeholders will be able to rate the other involved agents' performance, and this rating will become, in time, an evaluation criterion.
- A Control Board will be set up, with supervision competencies, being able to assess the procedures both before and after implementation, on a random or quantitative (economic) criteria. This Board will publish an annual report on the service performance, and take any other action considered pertinent in view of their discoveries.

On the other hand, for transparency, the Citizens Hub service will publish clear protocols and common procedures to be pursued by all the stakeholders under the Save the Homes process and will make it publicly available on the web. Also, a continuous dialogue with stakeholders will make these documents alive and updated to continuous quality improvement and pursue of excellence.

4.6 Potential misuse of research results

Risk assessment and continuous monitoring is done as part of the project detailed Data Management Plan (DMP) with consideration of the impact on human rights (e.g. new data gathering, merging data, new technologies etc.).

The section 10 of the [H2020 Guide](#), recommends using the following Ethics Checklist:



MISUSE	YES/NO		Information to be provided	Documents to be provided/kept on file
Does your research have a potential for misuse of research results?	<input type="checkbox"/>	<input type="checkbox"/>	1) Risk-assessment. 2) Details of the applicable legal requirements. 3) Details of the measures to prevent misuse.	1) Copies of authorisations (if required). 2) Copies of security clearances (if applicable). 3) Copies of ethics approvals (if applicable).

Table 3.- Misuse ethics checklist



5 Ethics assessment and assurance protocol

For all Save the Homes activities, ethics is an integral part of research and development from beginning to end, and ethical compliance is seen as pivotal to achieve real research excellence. The respective Ethics Assessment Tool provides guidelines and concrete procedural steps for project consortium to conduct thorough and continuous ethical evaluation from the conceptual stage of the proposal onwards; not only to respect the legal framework but also to enhance the quality of the research. Ethical research conduct implies the continuous application of fundamental ethical principles and legislation to scientific research in all possible domains of research.

- Key objective: In addition to the scientific evaluation focusing on the scientific merit, the quality of management and the potential impact, the Continuous Ethics Assessment & Assurance ensures that all research and development activities carried out in the Save the Homes are conducted in compliance with fundamental ethical principles.

The Continuous Ethics Assessment & Assurance procedure falls into 2 stages that are interrelated:

5.1 STAGE 1: Ethics Review(s)

Ethics review is carried out by Save the Homes Ethics Advisory Board (EAB). EAB maintains an overview of the work throughout the whole course of the project and helps consortium to think ahead about possible problems that might arise and how they can be addressed. The different expertise and experiences of EAB will help consortium to continuously check for compliance with ethical standards within relevant research fields.

The review starts with the initial ethics screening taking into account the results from the ethics self-assessment (carried out by the consortium in the project application phase) together with the results from ethics pre-screening and ethics summary report (carried out by the qualified independent ethics experts assigned by the EC) and ethics workshop summary reports (outcomes of ethics assurance workshops as carried out in Stage 2). The objective of the ethics review is to assess and discuss potential ethical issues and provide a list of potential ethical concerns and risks that can be further assessed in the Ethics Assurance Workshop.

The ethics review focuses on issues such as:

- human rights & protection of human beings
- animal protection & welfare
- data protection & privacy
- environmental protection
- malevolent use of research results
- compliance with international, EU & national law.

It may also cover issues of research integrity, including, fabrication, falsification and plagiarism in proposing, performing, or reviewing research or in reporting research results; this includes misrepresenting credentials and improprieties of authorship.

5.2 STAGE 2: Ethics Assurance Workshop(s)

The Ethics Assurance Workshop is led by a representative of the EAB and follows a predefined workshop format. The objective of the Ethics Assurance Workshop(s) is to raise the awareness of potential ethical risks within project consortium and involve all consortium members in continuous ethics assessment and ethics assurance procedures. Since ethics issues could arise in many areas of

research the objective of respective workshop is also to involve and encourage partners to start thinking from the very beginning about ethics while designing research protocols. It is to assist and provide guidance to WP leaders, particular partners (e.g. demo case holders), specific working groups or consortium as a whole to effectively deal with the ethics issues raised by their research and development activities and, if necessary, to take preventive or/and corrective measures. The ethics assessment is conducted on the basis of results from the Ethics Review and information provided by the consortium partners taking into account their specific domain expertise. In case there are several critical ethical issues identified which require additional advice, guidance, in-depth analysis, or the expertise not available within the consortium, the EAB can propose to project coordinator to involve external independent experts or bodies (e.g. GDPR experts).

The outcomes of the Ethics Assurance Workshop will be summarized in a workshop summary report. The possible outcomes are:

1. **No substantial ethics issues:** Workshop confirmed that the project does not raise any substantial ethics issues at the moment. No immediate action is needed. Still, future ethics reviews by EAB and ethics assurance workshops are needed for continuous assessment of potential ethics issues.
2. **Conditional ethics clearance:** In this case clearance is subject to conditions. The workshop summary report lists one or more 'ethics requirements' which must be taken into account and implemented. This may include supplying additional information/documents, adjusting methodology to comply with ethical principles and relevant legislation, applying informed consents etc. If needed, EAB will recommend to the project coordinator the involvement of additional independent external expertise.
3. **No ethics clearance:** In case of serious or complex ethics issues identified (e.g. fraud, misuse of research results, involvement of children without obtaining approval from the legal representative, involvement of vulnerable categories, data not kept securely, unauthorized access to personal data, harming human rights, fabrication, falsification and plagiarism etc.) immediate corrective actions are proposed by EAB to project coordinator, such as suspension of an activity, strategic management committee meeting, involvement of CINEA project officer etc.

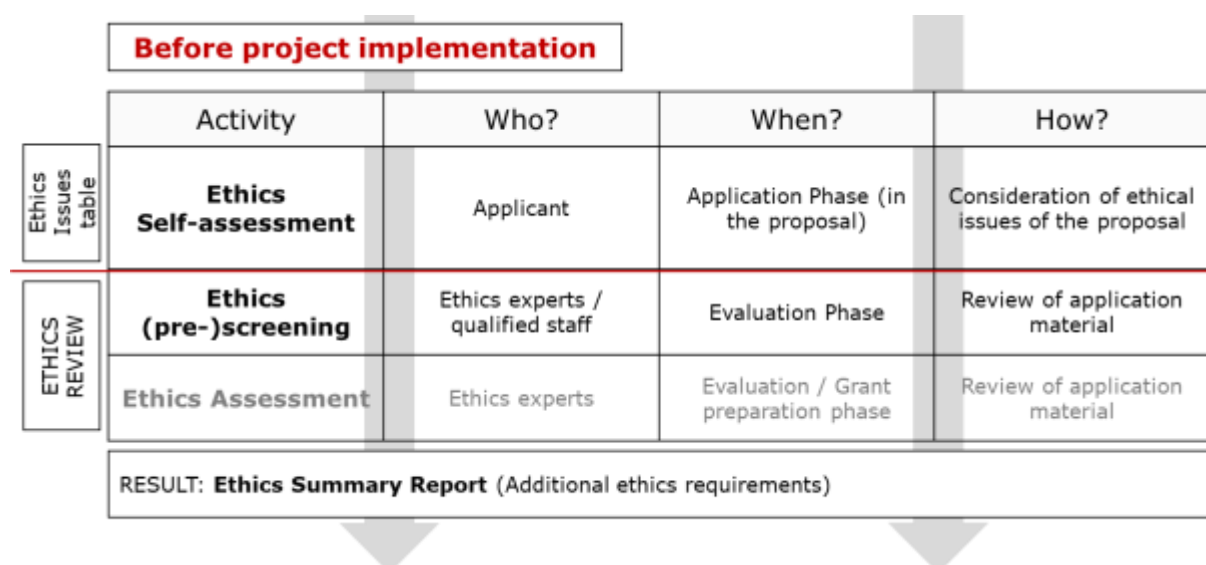


Figure 1.- Ethics assessment and assurance protocol before project implementation

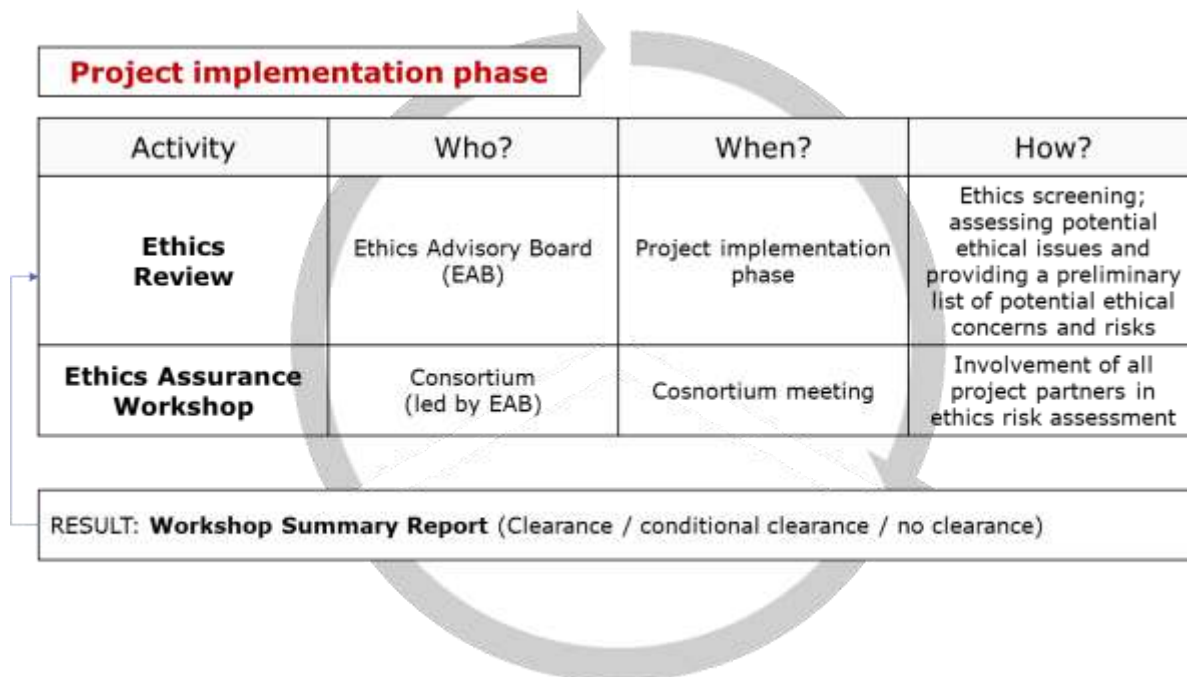


Figure 2.- Ethics assessment and assurance protocol during the project implementation



6 Final Remark

The aim of this Ethical Manual is to offer a focused and practical guidance for project partners involved in activities including potential ethical issues. It has been produced during the first half of the project by the Save the Homes partners IVE and HIA to establish a guidance on ethics that should be taken into consideration during the pilots' demonstration, where building occupants will be involved, and data collection is going to take place. During the mid-project Consortium meeting, an Ethics workshop will be held to review all relevant research activities in order to ensure the compliance and control with the main ethical principles and standards.

The manual will be constantly updated throughout the whole duration of the project based on new ethical standards and issues that may arise. The final version of the Ethics Manual will provide all the needed information and guidelines for the topics addressed by the proposed framework. All partners will take part in this ethics assessment as it covers all the project areas.



Annex 1 - StH Document: Informed consent

Model 1:

Informed Consent for participating in scientific research:

“Save the Homes”

I have been informed about the research. I have read the written information. I have received the opportunity to ask questions. I have received the opportunity to consider my participation to the research. I have the right to withdraw my consent at any time, without giving a specific reason.

I consent with participating in the research and give permission to use the data as described in the information letter.

I wish to/not to (please circle choice) be informed on the research outcome.

I give permission to save the data up to 5 years after the research has finished.

I wish to/not to (please circle choice) be contacted for further research.

Name _____

Date of birth _____

Date

Signature

Signee, responsible researcher, declares that the abovementioned person has been informed about the research both orally and by written text.

Name _____

Function _____

Date

Signature



Model 2:

“You have been invited to participate in this survey based on _____.
I would greatly appreciate your participation in a short (_____) minute survey about _____.

General Information

The information on this page is intended to help you understand exactly what I am asking of you so that you can decide whether or not you would like to participate in this study. Please read this consent form carefully before you decide to proceed with the survey. If you decide to not participate, it will not be held against you in any way. You may exit out of the survey at any time.

Privacy and confidentiality

Your participation in this survey is completely voluntary, and your responses will not be shared with your employers. Your answers will be kept confidential and your identity protected. All data will be transmitted by a secure, encrypted internet connection and stored in a password protected file. The ***insert university/institution here*** Office of Research Assurances has determined that this study satisfies the criteria for ***insert applicable national or EU legislation***

Potential harms / benefits

There are no known harms associated with your participation in this research **(if there are potential harms, state them here)**. ***State how they will or will not benefit from participation***

If you agree to the terms listed above, please proceed to the survey **(*if they click onto the next page, that serves as their informed consent*)**. Thank you in advance for your time and cooperation. Please be honest with your answers. Your responses are extremely valuable to our research! If you have any questions, please do not hesitate to ask.

Thank you,

Contact information here