

Contact the
Research Team:



George Chryssochoidis
g.chryssochoidis@uea.ac.uk
01603-592694



Marco Boeri

Contact the
Research Team:



Charlie Wilson
charlie.wilson@uea.ac.uk
01603-591386



Lucy Crane

Consultation Document **on** **Mapping Renovation Decisions**

the 'VERD' project
**(Value propositions for
Energy efficient Renovation Decisions)**

in conjunction with B&Q, Adapt (LCIC),
Broadland & Sutton District Councils

and the support of the
UK Energy Research Centre (UKERC)

June/July 2012



Tyndall°Centre[®]
for Climate Change Research

Overview of this consultation document

The research team at UEA has developed a detailed 'mapping' of homeowners' renovation decisions. This mapping includes what we think are all the key influences on renovation decisions, and how they inter-relate.

The mapping will form the basis for the second phase of our project, including a national data collection effort with >1000 homeowners. So it is critical that we get this mapping right.

The purpose of this consultation document is to explain our mapping to you so you can tell us what you think (warts and all)!

Let us know what you think ...

At various stages in this document, we will ask open questions. These will be in red italics.

What do you think of this approach?

Do you think we've missed anything out?

Do you think we've included anything that's not needed?

Do please let us know what you think in response to these questions, or anything else in this document:

George Chryssochoidis: g.chryssochoidis@uea.ac.uk 01603-592694

Charlie Wilson: charlie.wilson@uea.ac.uk 01603-591386

The VERD Project

(Very) Brief Overview

Key research questions

Why do some homeowners decide to do energy efficient renovations ...
and others don't?

Why do some homeowners decide to do renovations ...
just not energy efficiently?

And why are homeowners interested in renovations
in the first place?

Our overall approach

(1) Characterise renovation decision: key elements & influences

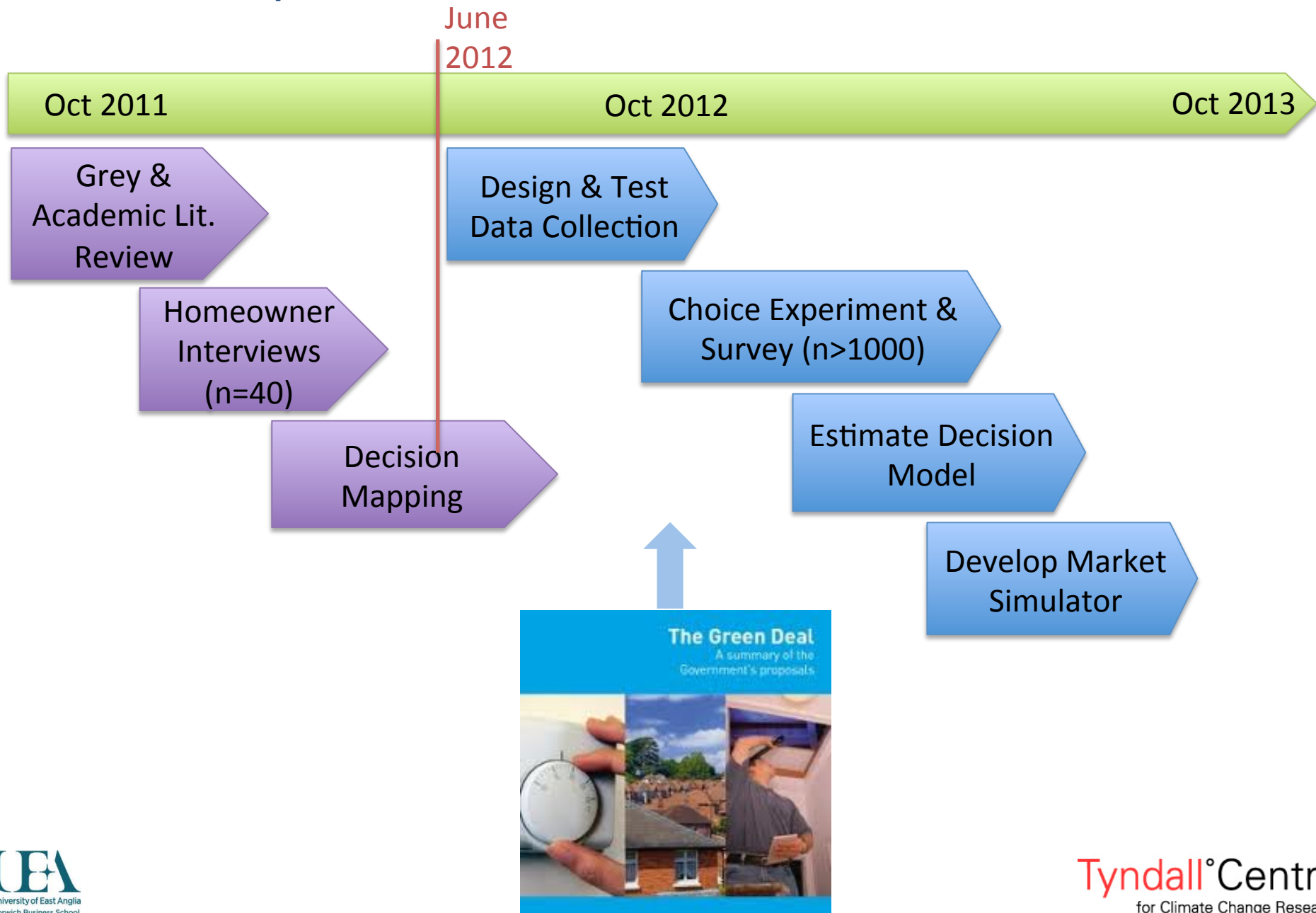
(2) Test characterisation of renovation decision

(3) Develop formal model of renovation decision

(4) Use model to inform service providers' offerings to homeowners

Work completed

Work to do



Characterising renovation decisions

Conventional approach:

- (1) decision as static 'event':
influences → decision → outcome
- (2) 'energy efficiency' as discrete
type of renovation
- (3) energy efficiency as necessary
motivation for renovation ...
- (4) ... if 'value proposition' is right
(cost / financing, credibility of
contractor, disruption to home
etc.)

Our approach:

- (1st innovation): decision as *process*
represented in 5 stages
- (2nd innovation): decision process
rooted in and emergent from
domestic normality
- (3rd innovation): *influences* on
decision *change over the course of*
the process
- (4th innovation): renovations are
about changing the home to meet
the *demands of domestic life* ... (not
about improving energy efficiency)

What do we mean by 'renovations'?

We use 'renovations' to refer specifically to major renovations involving:

- (1) major structural changes / additions to the home, which are
- (2) wholly or partly contracted to building professionals.

Examples of *energy efficient renovations* include:
replacing windows and doors, installing insulation.

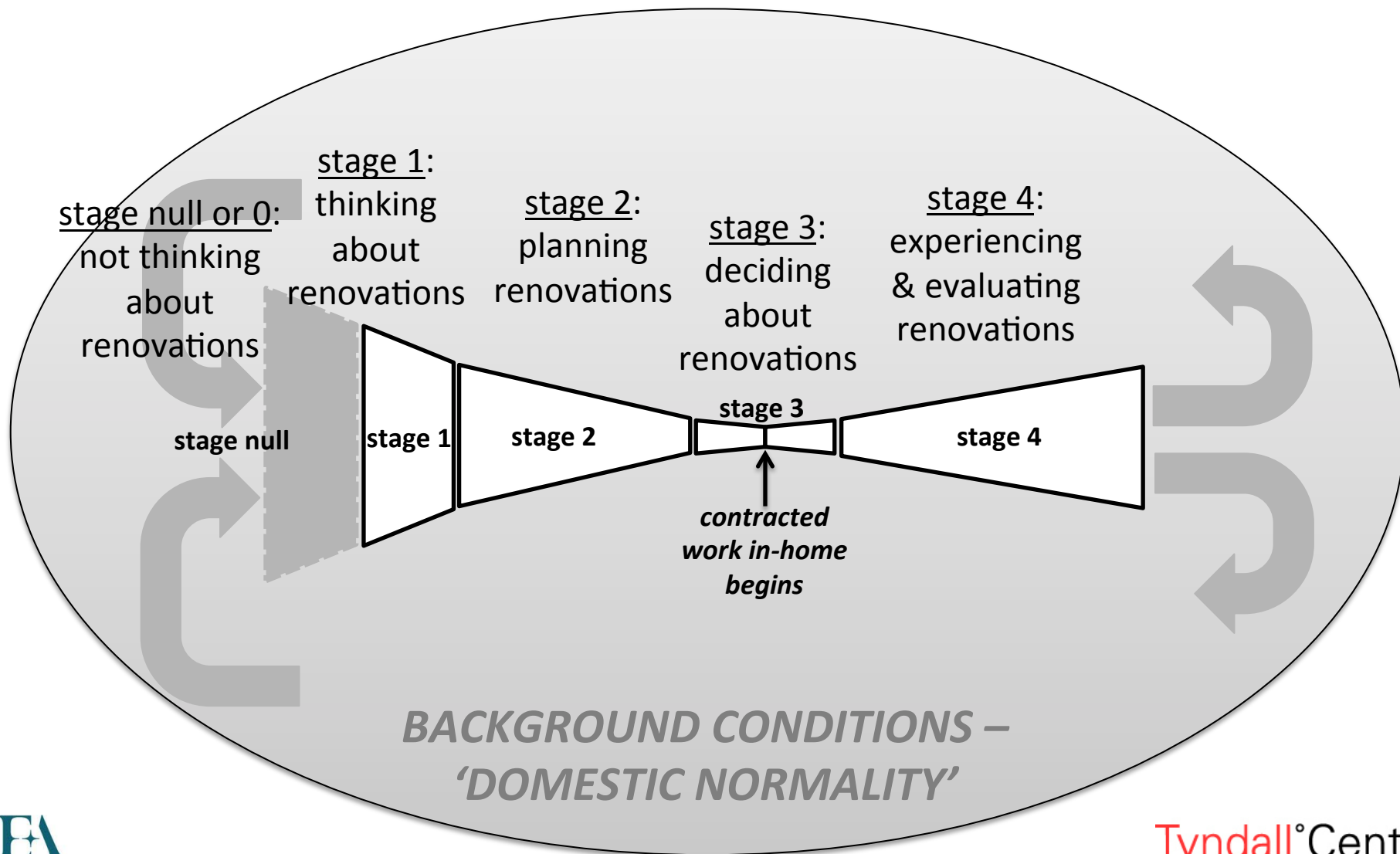
Examples *amenity renovations* include:
remodelling kitchens, loft/garage conversions.

Many renovations in practice will be mixed (*amenity / efficiency*).

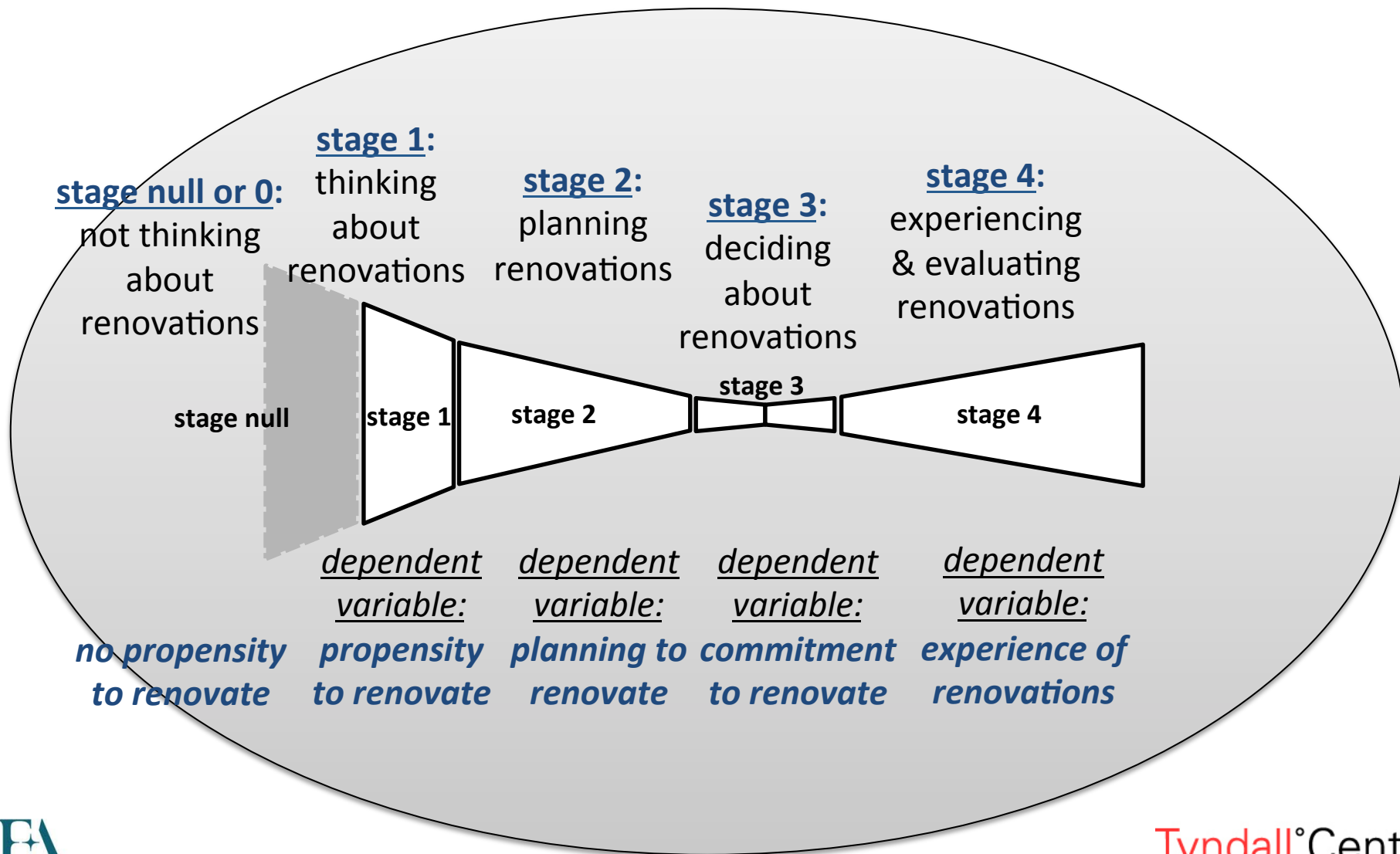
Mapping Renovation Decisions

Basic Structure

Our 1st innovation is to treat the decision as a process,
represented here as a series of 5 stages
which take place within the context of domestic life or ‘normality’.



A renovation decision process involves a homeowner moving from stage 0 through to stage 4. Each of the stages has an outcome we're interested in: these are our dependent variables.



Here's more detail on stages 0-4 in the renovation decision process, including questions we might use to 'measure' which stage homeowners consider themselves to be at.

Stage	Description / Characterisation	Questions / Constructs / Identifiers	Dependent Variable
<u>Stage null / 0</u> Background Conditions <i>(domestic normality)</i>	<ul style="list-style-type: none"> Irrelevance, lack of salience, or antipathy towards renovating. Possible 'imbalance' within domestic normality / general awareness of needs or desires for change - <i>but</i> not concretized as intention or expectation. 	<ul style="list-style-type: none"> Not measured directly, but implied if none of stages 1-3 are evidenced. Characterised principally by states of domestic normality. 	[n/a: low propensity to renovate - see stage 1]
<u>Stage 1</u> General Decision Process <i>(the slippery slope)</i>	<ul style="list-style-type: none"> Persistent 'imbalance' means needs or expectations for change accumulate, and renovation intentions start to crystallise. Increasing clarity of motivations (why) linking to possible measures (what, which measures or parts of the home). 	<ul style="list-style-type: none"> <i>Are you aware of things you want / expect / need to change about your home?</i> <i>Do the demands of domestic life make major changes to your home necessary?</i> <i>Does seeing or hearing about renovating on the TV / the internet give you ideas for renovating?</i> 	Propensity to renovate.
<u>Stage 2</u> Focused Decision Process <i>(resolving intentions)</i>	<ul style="list-style-type: none"> Renovation plan is taking shape, as is a clear intention and commitment to follow through. Motivations and measures are clear. Scoping out of means (how much) and methods (how). 	<ul style="list-style-type: none"> <i>Are you planning to renovate? Do you know what parts of the home are you going to include in your renovation plans?</i> <i>Have you sought information about renovation options / costs / contractors / financing?</i> 	Planning to renovate.
<u>Stage 3</u> Decision Point <i>(crossing the ts, dotting the is)</i>	<ul style="list-style-type: none"> Renovation plan being finalised or finalised, i.e., measures, means, methods all at or near resolution (though they may still change). Final selection of contractor. Final confirmation of cost and how to pay. 	<ul style="list-style-type: none"> <i>Are you definitely going to renovate?</i> <i>Have you finalised your renovation plans?</i> <i>Have you agreed the terms of work for a contractor? Are you close to signing a contract?</i> 	Commitment to renovate.
<u>Stage 4</u> Decision Embedding <i>(renovated domestic life)</i>	<ul style="list-style-type: none"> Renovation work complete, and changes to home still salient. Actively experiencing of changes to home. Awareness of renovations' impact on domestic life. Remembering and comparing domestic life before renovations. 	<ul style="list-style-type: none"> <i>Have you recently completed renovations?</i> <i>Are you aware of your home feeling renewed / different?</i> <i>Are the effects of the renovations on domestic life still noticeable?</i> <i>Do the renovations not yet seem 'normal', do they still stand out?</i> 	Experience of renovations.

Our 2nd and 3rd innovations are that we believe renovation decision processes to be rooted in, and emergent from domestic normality. In this sense, renovations are about changing the home to meet the demands of domestic life (not improving efficiency!).

We think that a common problem with research on renovation decisions is that the homeowners interviewed or surveyed tend to have an already existing interest in or commitment to renovations and/or energy efficiency.

But where does this interest or commitment come from?

We think it emerges from the conditions of normal, everyday domestic life. We characterise this domestic normality using six 'states'. An interest or intention to renovate – even in the most general or vague sense - is created by the inter-play between these states.

Here is a summary of our six ‘states of domestic normality’. How these states play out in different homes helps explain where the interest or motivation to renovate comes from.

State	Description
Delineating	The process through which householders identify themselves as similar to or different from others, and normalise / justify their own behaviour.
Adapting	Changing the physical arrangement or material surroundings of the home to meet competing needs or solve perceived problems with physical space or objects.
Prioritising	The balancing of competing and at time conflicting commitments in domestic life which may be identified in boundaries or the crossing of boundaries.
Embodying	Views of the body and its abilities will impact how space is used and the physicality of living in a home.
Demonstrating	Challenging or confirming activities in the home, generating thoughts and ideas for changing the home, or creating barriers to achieving balance. May involve the absorption of media representations of property, gov. policy, etc.
Negotiating	Family dynamics and power relations within the context of the home. Whose needs are being prioritised and how these needs are being put before others.

Our 4th innovation is to recognise that influences on the decision change over the course of the process. As the decision proceeds, it becomes more like a conventional ‘intentional’ decision.

The ‘states of domestic normality’ are particularly important at stage 0 – 1. They help us understand why homeowners are even considering renovations in the first place (and so why they may walk through the door of a home renovation store, or sign up to a local authority incentive programme).

As the *decision process proceeds*, the importance of domestic normality recedes, and the influence of more immediate concerns increases. The decision becomes explicitly intentional and deliberative. This means thinking and deciding about:

measures (what to renovate?)

means (how much will it cost, how to finance it?)

methods (how to do the renovations?)

Most research on renovation decisions emphasizes a more conventional set of decision influences: cost, financing, hassle, information, energy assessments, trust/credibility of contractors, etc.

We have grouped what we think to be the important decision 'elements' in terms of whether they relate to:

- the renovation work itself
- the characteristics of the household or decision maker
- the process of making the decision
- the context in which the decision is made

Just as the role of domestic normality changes over the course of the decision process, so too do the influence of different decision elements.

Here is a summary of the decision elements we've included in our decision mapping, and the stages to which they apply. It's important to note that specific considerations about information, energy savings and financing only become relevant once the homeowner is already at stage 2 of the decision process.

	Decision Elements	Decision Stage			
		1	2	3	4
Renovation	Measures	-	yes	yes	-
	Renovation Work	-	yes	yes	-
Decision Influences	Information	-	yes	yes	-
	Financing	-	yes	yes	-
	Energy	-	yes	-	-
Decision Making	Decision Process (Complexity, Burden, Time, Ease)	-	yes	yes	-
Decision Maker Characteristics	Motivations, Attitudes	yes	yes	yes	yes
	Past Experience	yes	yes	-	yes
	Values, Beliefs (inc. Energy, Property Value)	yes	yes	-	yes
	Perceived Behavioural Control	yes	yes	yes	yes
Contextual Influences	Context (Regulation, Markets, etc.)	-	yes	-	-
	Triggers (Events)	yes	yes	-	-
	House Characteristics (Physical)	yes	yes	-	-
Household Characteristics	Household Lifecycle, Size	yes	yes	-	-
	Tenure (Ownership, Tenure)	yes	yes	-	-
Social Influences	Identity, Meaning, Status	yes	yes	-	yes
	Social Norms	yes	yes	-	yes
	Routines & Normality (Renovating)	yes	-	-	yes

Let us know what you think ...

So far we've introduced our overall approach to how we characterise renovation decisions.

Q1: What do you think of this overall approach?

Q2: Do the stages of the decision process make sense to you?

Q3: Do the 'states of domestic normality' make sense to you?

Q4: Do you think we've missed out any important category of decision element?

Mapping Renovation Decisions

You've now seen our general approach to understanding renovation decisions.

Next, we'll explain in more detail how we mapped the different decision stages.

Mapping the renovation decision meant working out how all the different influences on the decision process were inter-related, beginning with the 'states of normality'.

We started with a blank piece of paper and used our interview data and literature review to list:

- all relevant 'states of normality'

- all relevant decision elements

- the outcome or dependent variable for that stage

We wrote storylines or narratives which described how the 'states of normality' related to one another, and to the decision outcome.

We then formalised the relationships described in these narratives as positive (reinforcing) or negative (counteracting) influences.

Adding in decision elements

more characteristic of intentional, planned decision making completes the mappings at each stage of the decision process.

Once we had established how the 'states of normality' provided the backdrop of influences,

we added in other relevant decision elements which are more characteristic of intentional, deliberative decision making.

Then we sketched out the lines of influences between these different elements and the decision outcome variable.

This produced a web of states and elements (shown as boxes) and influences (shown as arrows) which make up our initial decision mappings.

That's it for the explanation! Next we'll show you our mappings of the different stages of the decision process, including both the **'states of normality'** and the **decision elements**.

The top half of each mapping describes the background conditions for the decision (**blue boxes** correspond **to states of normality**).

The bottom half of each mapping describes the intentional decision making process (**red boxes** correspond to **decision elements**).

These decision mappings are what we are soliciting your feedback on.

Mapping Renovation Decisions

stage 1 – thinking about renovations

This is the narrative describing how the renovation decision process is rooted in, and can initially emerge from, the background conditions of domestic normality (from stage 0 to stage 1).

Delineating:

An awareness grows within a household of differences between domestic life and the domestic life of others.

Adapting:

This may create a perceived need to change or adapt the physical arrangement of the house by rearranging objects, DIY projects, or through structural renovations requiring outside contractors.

Prioritising:

Potentially competing visions as to how the home is used are brought to the fore.

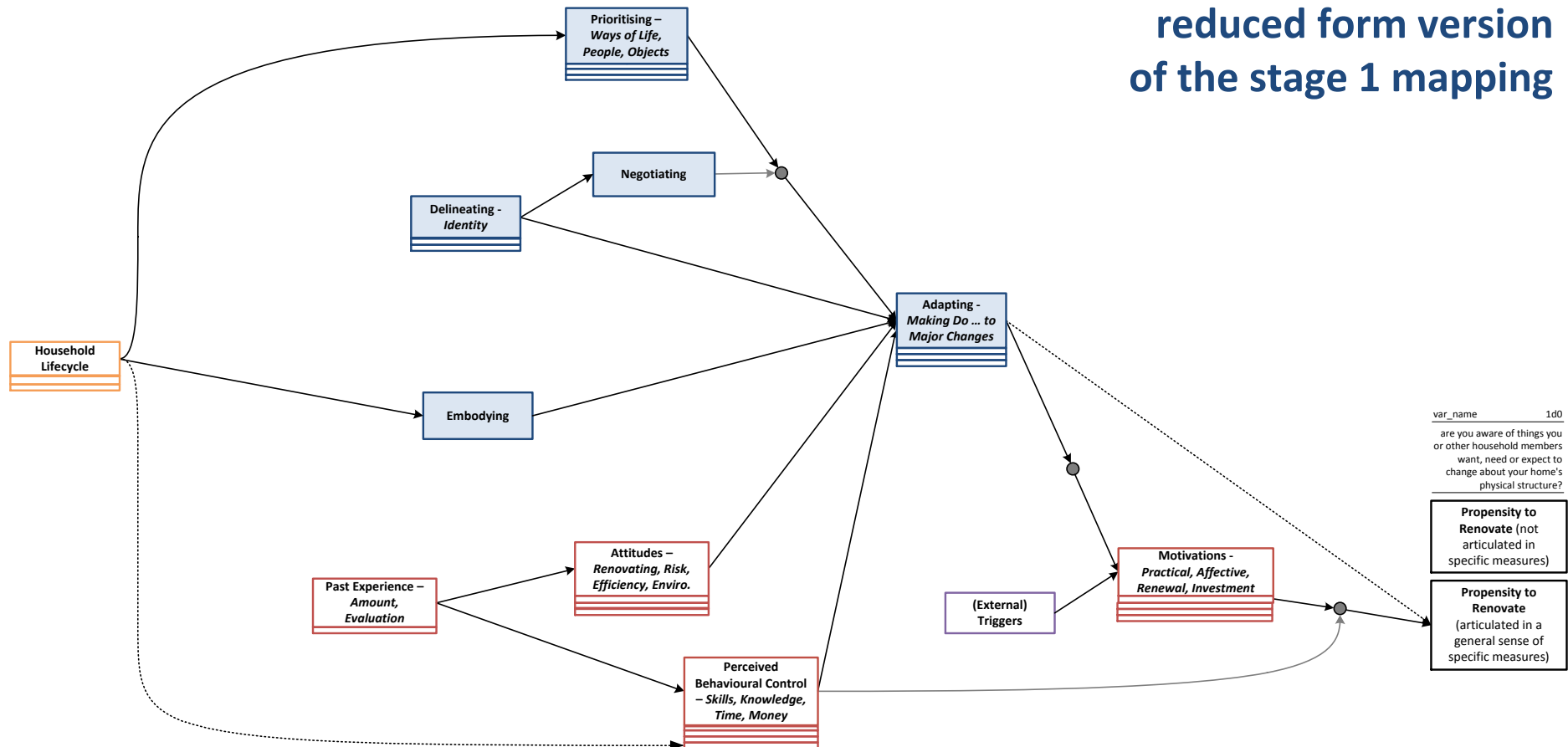
Negotiating:

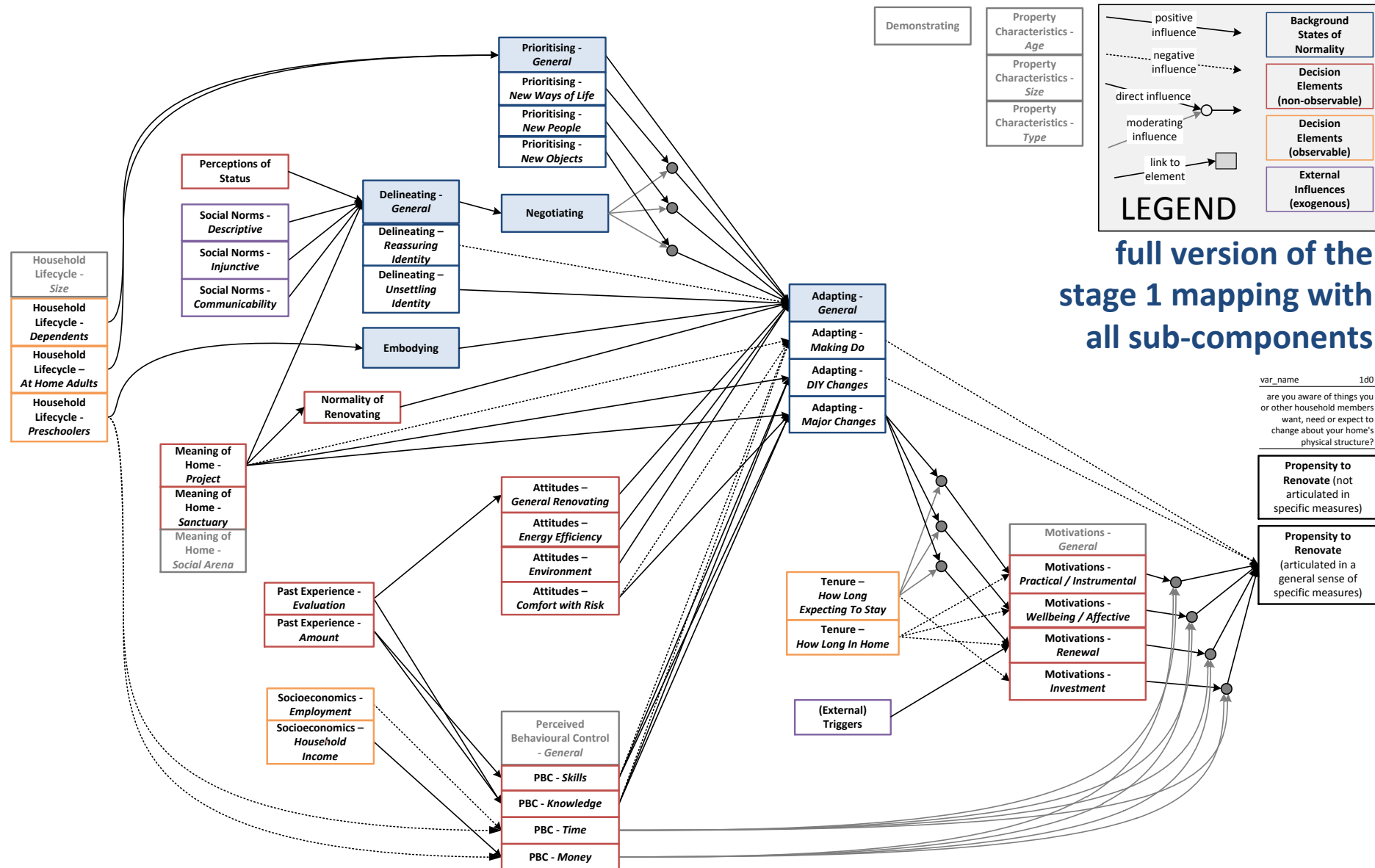
The roles and perspectives of different household members may influence how these competing visions are resolved.

Embodying:

The particular physical needs of certain household members such as children or elderly people may also imply changes are needed to the home.

reduced form version of the stage 1 mapping





Let us know what you think about the mapping of stage 0/1...

An important aim of this stage is to try and distinguish homeowners who are thinking about renovating in the most general sense, from those who are not.

Q5: What do you think of this mapping of stage 0/1?

Q6: Does the role of the 'states of domestic normality' make sense?

Q7: Do you think we've missed anything important out?

Q8: Or are things included which are not important?

Mapping Renovation Decisions

stage 2 – planning renovations

Mapping stage 2 was more complex as many more decision elements came into play to describe how homeowners start to work through

- the *measures* (what to renovate?)

- the *means* (how much? how to pay?)

- the *methods* (how? when?)

Only homeowners who have moved from stage 0 through stage 1 will be at this stage 2.

However, stage 1 can also effectively be jumped if there are external triggers (e.g., a boiler breaking down).

This is the narrative describing how the planning process for renovations remains influenced by background conditions of domestic normality at Stage 2.

Demonstrating:

A household is open to or seeks out ideas and inspiration from outside sources, for example by visiting stores, watching TV shows, or talking to friends or family members.

Negotiating:

Different household members may be influenced differently ... which leads to discussions within the household about ideas for changing the home.

Adapting:

These feed directly into the growing awareness or perceived need to make changes to the home.

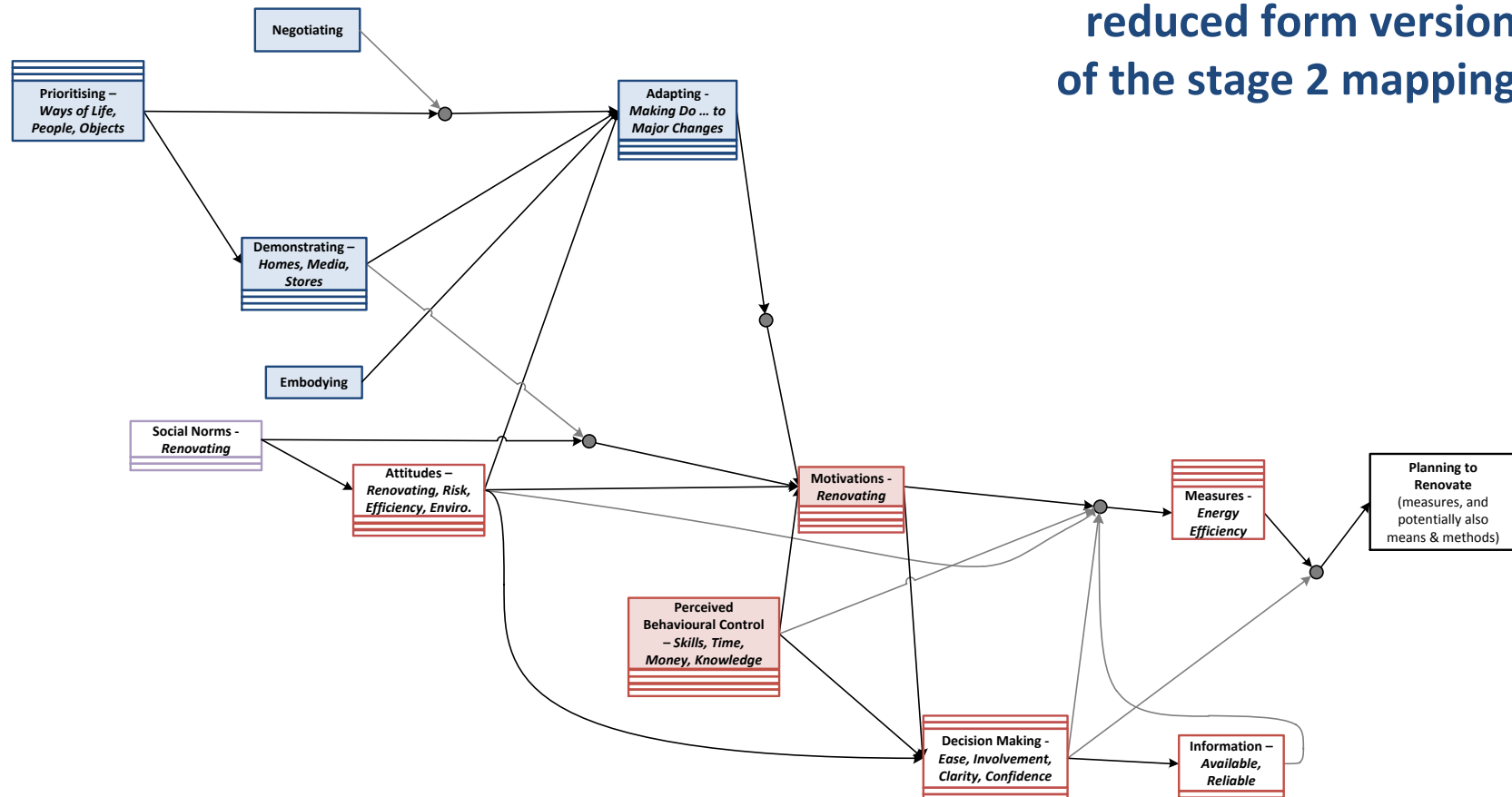
Prioritising:

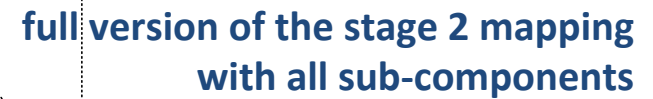
How the attention or significance given to different visions for the home is reconciled will depend on the underlying priorities for settling imbalances or needs in domestic life.

Embodying:

Particular physical needs of certain household members may also shape these processes shaping the need to make changes to the home.

reduced form version
of the stage 2 mapping





Let us know what you think about the mapping of stage 2 ...

An important aim of this stage is to describe how homeowners' start to plan their renovations in more detail, particularly focusing on measures – *what* they want to renovate.

Q9: What do you think of this mapping of stage 2?

Q10: Do you think we've missed anything important out?

Q11: Or are things included which are not important?

Mapping Renovation Decisions

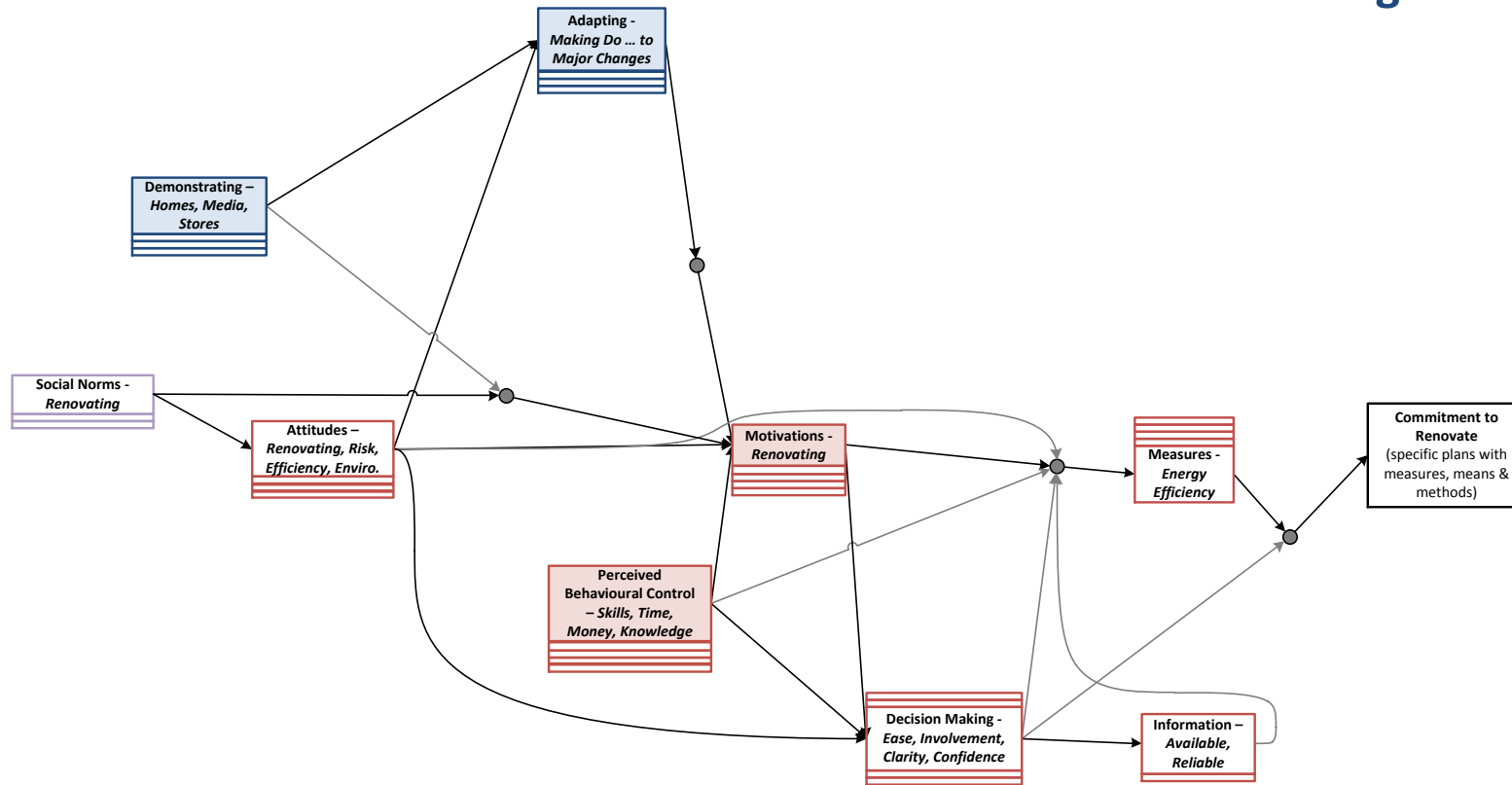
stage 3 – deciding about renovations

This stage focuses on the final choices made by homeowners.

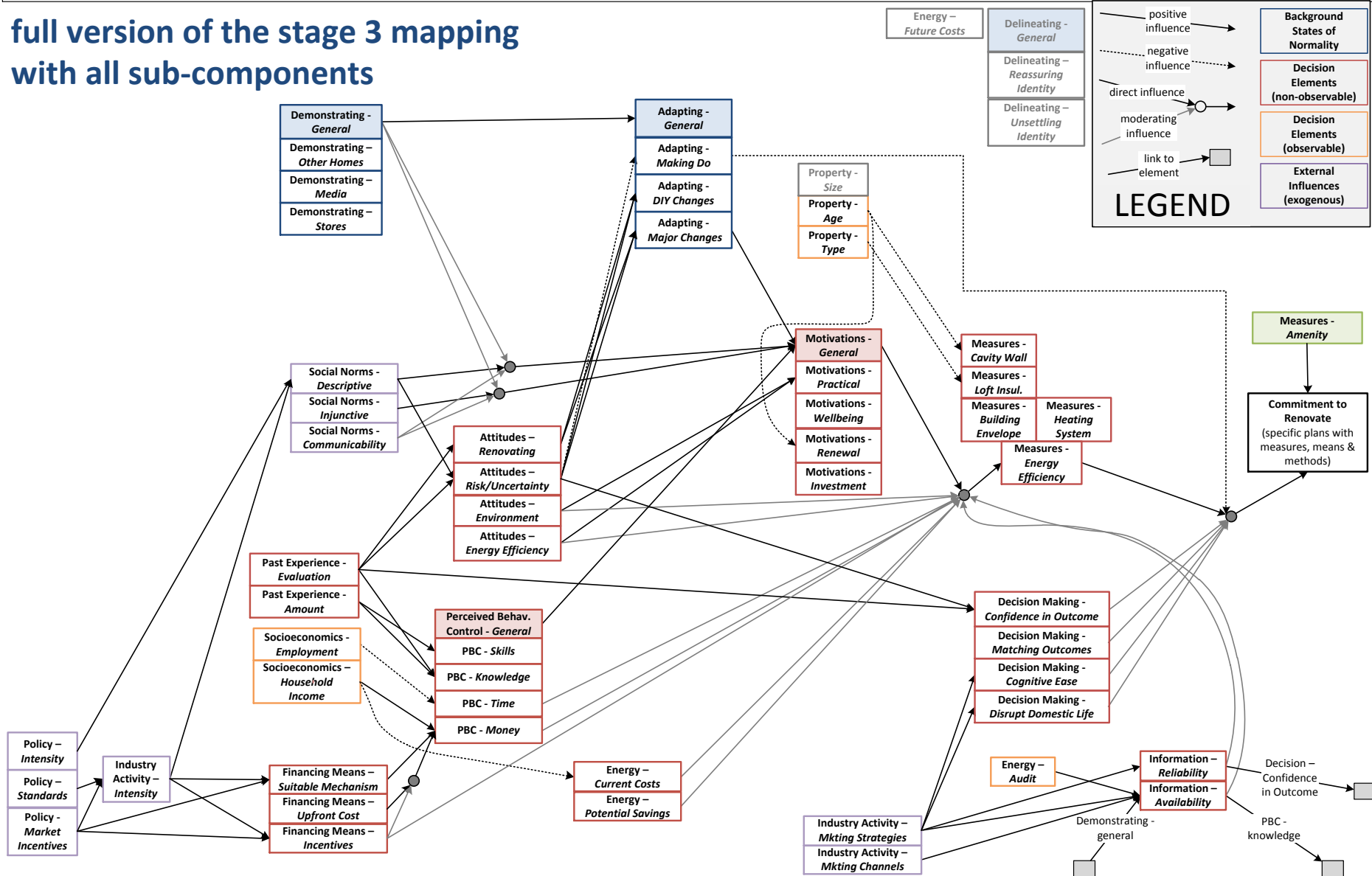
Considerations include: which contractor? which specific products? what maximum budget? with which financing mechanism? The final plan takes shape and is committed to.

The background conditions or 'states of normality' exert only a minor influence.

**reduced form version
of the stage 3 mapping**



full version of the stage 3 mapping with all sub-components



Let us know what you think about this mapping of stage 3 ...

An important aim of this stage is to describe homeowners' final considerations before actually having the renovation work done.

Q12: What do you think of this mapping of stage 3?

Q13: Do you think we've missed anything important out?

Q14: Or are things included which are not important?

To help us measure accurately how homeowners weigh up six important elements in their final decision, we will use a '*choice experiment*'.

In a choice experiment, homeowners are presented with 2 alternative renovation options and are asked to choose which they prefer. They can also choose neither of the two.

Each renovation option describes a particular combination of elements. In the choice experiment these are called 'attributes'.

Analysis of homeowners choices reliably measures how important the six attributes are in the decision process.

We will repeat the choice experiment 3 times:

- 1st context or scenario for the choice:
 - renovation options will describe energy efficiency improvements (windows and insulation);
- 2nd context or scenario for the choice:
 - renovation options will describe kitchen remodelling;
- 3rd context or scenario for the choice:
 - renovation options will describe a mixture of efficiency (windows & insulation) and kitchens renovations.

The six elements we include in the choice experiment should be key considerations in final renovation decisions. These are shown in the left-hand column.

Elements included (attributes)	Level 1	Level 2	Level 3
upfront cost	[£2000]	[£4000]	[£6000]
reduction in annual household running costs	[£0]	[£100]	[£300]
effort or burden of deciding	[necessary information readily available + renovations easy to organise]	[necessary information somewhat difficult to find & understand + renovations a hassle to organise]	[necessary information difficult to find & understand & renovations a real headache to organise]
availability of suitable financing mechanism	[savings or conventional loan]	[borrowing against mortgage]	[loan repaid through energy bills]
trust in & reliability of contractor	[very trustworthy & reliable]	[largely trustworthy & reliable]	[probably trustworthy & reliable]
disruption to domestic life	[renovation work not disruptive + easy to accommodate within domestic life]	[renovation work briefly disruptive + possible to accommodate within domestic life]	[renovation work very disruptive + a hassle to accommodate within domestic life]

Renovation options are described by a mixture of these six elements or attributes (using combinations of levels 1-3 for each).

Some of these elements have been used before in choice experiments ... others haven't (e.g., the effort or burden of deciding, and the availability of a suitable financing mechanism).

elements in the choice experiments	other studies								our proposed study
	Element Energy (2011)	Banfi et al (2008)	Achtnicht (2011)	Kwak et al. (2010)	Jaccard & Dennis (2006)	Phillips (2012)	Willis et al (2011)	Oxera (2006)	
<u>measures (if not in alternatives or scenarios)</u> measures (description, characteristics, etc.)	yes	yes		yes		yes			VERD project: proposed no [in scenario descriptions]
<u>financial attributes</u>									
upfront cost	yes	yes	yes	yes	yes	yes	yes	yes	upfront cost
[reduction in] annual running costs (inc. energy)	yes		yes		yes		yes	yes	reduction in annual household running costs (inc. energy)
payback period for loan	yes		yes						
interest rate	yes								
public funding (subsidy, grant, etc.)			yes		yes				availability of suitable financing mechanism (no precedent?)
<u>information attributes</u>									
energy audit/assessment (cost, recommendations, etc.)	yes		yes			yes			
whether recommended by (friends, professionals, etc.)							yes	yes	
<u>decision / installation attributes</u>									
quality assurance (accreditation of installer, etc.)								yes	trust in & reliability of contractor
guarantee period / contract length			yes				yes		
inconvenience of installation (space requirements, time disruption, etc.)							yes	yes	disruption to domestic life effort or burden of deciding (no precedent?)
<u>non-financial 'behavioural / social' attributes</u>									
comfort level (air quality)					yes				
responsiveness (heating system)					yes				
<u>other environmental attributes</u>									
CO2 savings			yes						

Let us know what you think ...

Taken together, the elements included in the choice experiment should describe renovation alternatives clearly and comprehensively.

Q15: What do you think of this proposed choice experiment?

Q16: Do you think the elements are relevant and important?

Q17: Do you think the levels of the elements are realistic and clear?

Mapping Renovation Decisions

stage 4 – experiencing & evaluating renovations

This final stage 4 describes how homeowners experience, evaluate and assimilate the changes made to their homes back into their domestic life. This forms the basis of their experiences and how they communicate these experiences to others.

Stage 4 once again draws on the states of normality as homeowners experience and 'make sense' of the changes completed to their homes.

This is important not just in shaping household members' perspectives, attitudes and experiences of renovating ...

... but also in how this is communicated socially through inter-personal networks. This in turn can encourage others to renovate ... or put them off.

This is the narrative describing how homeowners experience the renovations and the changes to the home once completed (stage 4).

Decision Outcome / Dependent Variable:

A household has renovated the physical structure or arrangements of their home, and is still experiencing the effectiveness of these changes. This can be through higher order cognitive processes (evaluating, reflecting, justifying), or through assimilating and normalising the changes into domestic life and routines.

Demonstrating :

If successful, household members may discuss and evaluate the changes made to the home, or invite people to come and see the changes.

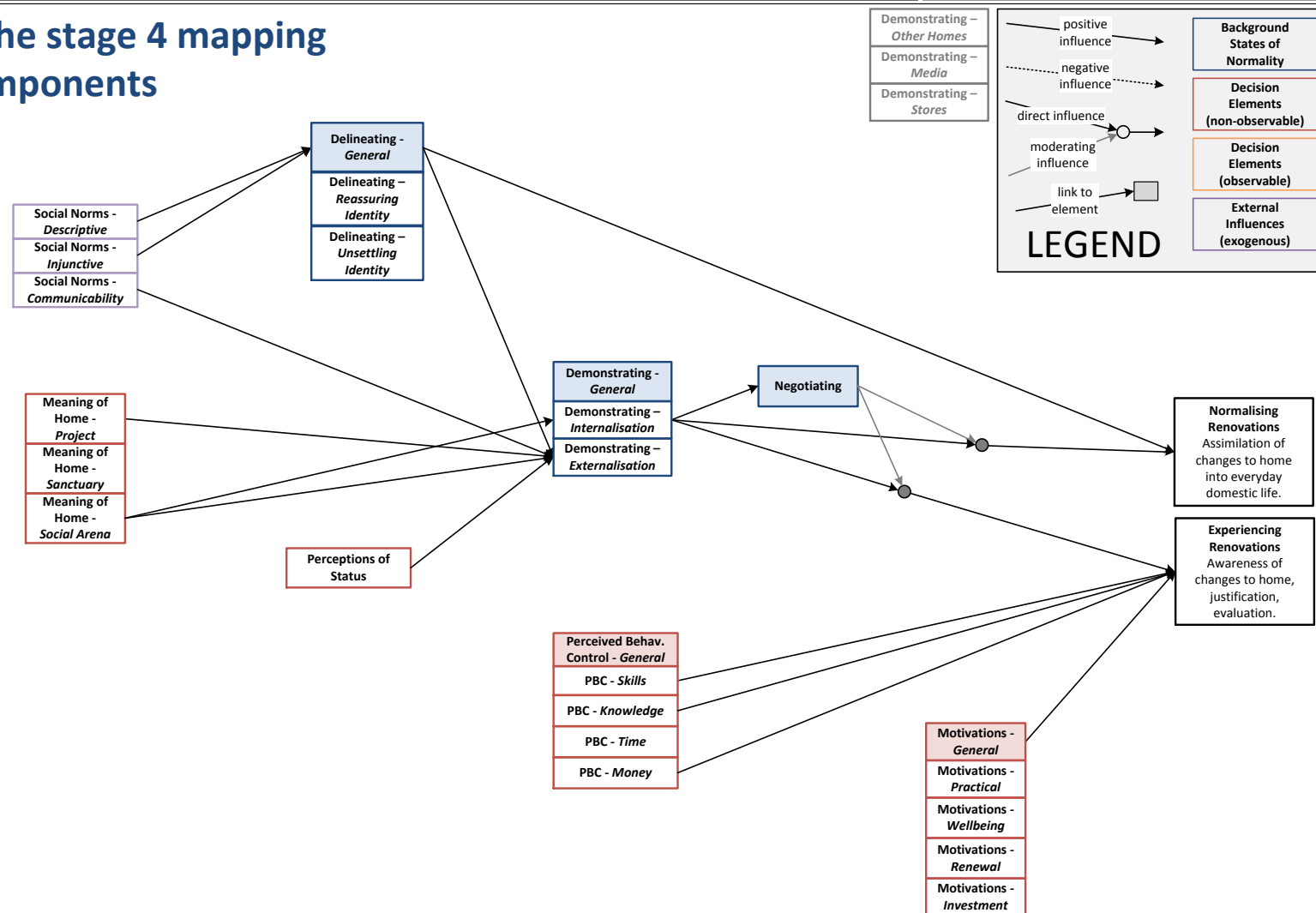
Delineating:

By showing others how their house has changed, a household will spread information on the renovations through social networks, and perhaps define the household as part of a group or not.

Negotiating:

The changes may have affected the ways household members talk about or behave in relation to the new space / objects created through the renovation work.

full version of the stage 4 mapping with all sub-components



Let us know what you think about this mapping of stage 4 ...

The aim of this stage is to describe homeowners' *ex post* experiences of renovating.

Q18: What do you think of this mapping of stage 4?

Q19: Do you think we've missed anything important out?

Q20: Or are things included which are not important?

That's it!

*Please do let us know what you think
about any or all what we've presented.*

<i>George Chryssochoidis:</i>	g.chryssochoidis@uea.ac.uk	01603-592694
<i>Charlie Wilson:</i>	charlie.wilson@uea.ac.uk	01603-591386

As a reminder, the full list of questions is:

Q1: What do you think of the overall approach?

Q2: Do the stages of the decision process make sense to you?

Q3: Do the 'states of domestic normality' make sense to you?

Q4: Do you think we've missed out any important category of decision element?

Q5: What do you think of this mapping of stage 0/1?

Q6: Does the role of the 'states of domestic normality' make sense?

Q7: Do you think we've missed anything important out?

Q8: Or are things included which are not important?

Q9: What do you think of this mapping of stage 2?

Q10: Do you think we've missed anything important out?

Q11: Or are things included which are not important?

Q12: What do you think of this mapping of stage 3?

Q13: Do you think we've missed anything important out?

Q14: Or are things included which are not important?

Q15: What do you think of this proposed choice experiment?

Q16: Do you think the elements are relevant and important?

Q17: Do you think the levels of the elements are realistic and clear?

Q18: What do you think of this mapping of stage 4?

Q19: Do you think we've missed anything important out?

Q20: Or are things included which are not important?

Contact the
Research Team:

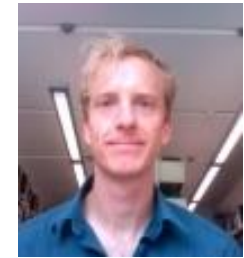


George Chryssochoidis
g.chryssochoidis@uea.ac.uk
01603-592694



Marco Boeri

Contact the
Research Team:



Charlie Wilson
charlie.wilson@uea.ac.uk
01603-591386



Lucy Crane

Consultation Document **on** **Mapping Renovation Decisions**

the 'VERD' project
**(Value propositions for
Energy efficient Renovation Decisions)**

in conjunction with B&Q, Adapt (LCIC),
Broadland & Sutton District Councils

and the support of the
UK Energy Research Centre (UKERC)

June/July 2012