Comparing circular kitchens: a study of the Dutch housing sector

Supplementary Material S1: Interview guide

The following material is part of the research article "Comparing circular kitchens: a study of the Dutch housing sector".

As part of this research, semi-structured interviews were conducted. Table S1 shows the interview sample questions and how they were based on CBC generator parameter options. CBC sub-parameters that could not be transformed into a relevant question for circular kitchens are shown with a "-".

Table S1. Overview of the CBC parameters and sub-parameters, and the kitchen-specific question that was iteratively derived from the parameters.

	CBC Parameter	CBC Sub parameter	Kitchen specific interview question	#
Technical model	Materials/ resources	technological materials	What materials are used for the kitchen? (biological vs. technical materials)	1
		biological materials	Are there any plans to change these materials in the future? If yes which one?	2
	Energy	Type of energy	Can the kitchen be adapted to electric cooking at a later date? If so, how?	3
	System architecture	System elements	What elements is the kitchen made up of?	4
			Is the kitchen wall-mounted, and if so, how?	5
			Does your kitchen need a retaining wall and how much space does it take up?	6
			When using a retaining wall, how should it be attached to a (intermediate) wall?	7
			Is equipment supplied with the kitchen? If so, which one and is it also circular? (in the case of not yet electric cooking)	8
	Amount	Number of elements or resources	-	
	Time(s)	Number of lifecycles	-	
		Expected lifespan	What is/are the expected technical lifespan(s) of the entire kitchen and its elements?	9
			What is/are the expected functional lifespan(s) of the entire kitchen and its elements?	10
	Lifecycle stage	Lifecycle stage of building component, part, material	-	
	Circular design strategies	Design for material reduction	Have strategies been used to ensure that less material is used? If yes which one?	11
		Design for energy reduction	Have strategies been applied to ensure that less energy is used? If yes which one?	12
		Design for attachment	In which colors is the kitchen available as standard?	13

			Have strategies been applied in the kitchen to increase the bond/attachment between the kitchen and the user? If yes which one?	14
		Design for reliability and durability	Have strategies been applied to increase the lifespan/sustainability of the kitchen? If yes which one?	15
		Design for standardization and compatibility	Have strategies been applied to standardize the kitchen and the elements from which it is constructed? If yes which one?	16
		Design for ease of maintenance and repair	Has ease of maintenance and repairs been considered in the design of the kitchen? If so, how?	17
			Are tools needed to assemble the kitchen? And if so, which one?	18
		Design for upgrades and adjustments	To what extent is the kitchen adaptable after initial installation?	19
			Does the kitchen design allow for upgrades and customizations? If so, how?	
			Is the kitchen height adjustable? And if so, how?	20
			To what extent can plumbing be made flexibly and changed during their service life?	21
		Design for disassembly	To what extent can the kitchen be disassembled and reassembled and how does that work?	22
		Design for recycling	Has recycling of the parts/elements/entire kitchen been considered in the design of the kitchen? If so, how?	23
	-		Describe your circular kitchen?	24
			Do you have environmental impact results? If yes, how were these results calculated/which method is appropriate to calculate these results?	25
			Does the kitchen have any certificate related to sustainability?	26
Industrial model	Key partners	Partners in supply chain or value network	Which partners do you work with?	27[1]
			Who are the material suppliers? And what do they deliver?	28
	Key activities	Activities	What activities do the partners carry out?	29
		Re-loop activities	What agreements have been made about take-back with the suppliers?	30
		(re-) Production process per activity	-	
	Key resources	Facilities for activities	In which facilities are these activities performed? (Shops, factories, sorting points, etc.)	31
		System elements	Which partners are responsible for which elements of the kitchen?	32
	Transport/logistics	Mode of transport	How does delivery take place from the supplier to you?	33
			Has thought been given to the transport from the kitchen to the customer/user?	34
		Distance	Are parts made outside the Netherlands?	35
	Process energy	Type of energy	What kind of energy is used to produce the kitchen?	36
business model	Key partners	Partners in supply chain or value network	Which partners do you work with?	27[1]
	Customer segments	Owner	Who owns the kitchen when using the kitchen?	37
		Customer	Do you only deliver business to business or also business to customer?	38
			Do you deliver to a specific type of customer?	39
	Supply chain relations	Primary contact customer	-	

	Kind of customer relationship	-	
	Primary supply chain contact	-	
	Kind of collaboration	-	
Cost structure	Cost proposition	-	
Revenue streams	Financial arrangement	Under what conditions is the kitchen delivered: lease terms, warranty, conditions for take-back/purchase, etc.?	40
	Income division	-	
Value proposition	Product/service proposition	What else is included in addition to the kitchen furniture? (Kitchen appliances, taps, etc.) And under what conditions?	41
		What agreements have been made about the maintenance of the kitchen?	42
	Value delivery	-	
	Value capturing	-	
Key resources	Key resources per supply chain partner	-	
Channels	Sale and (re)loop channels	Through which channels do you sell the kitchen? (webshop, telephone, shops, etc.)	43
		Through which channels do you arrange returns?	44
Take back systems	Facilities for take-back	What agreements have been made with suppliers of parts (and possibly equipment) of the kitchen about taking back?	45
Adoption factors	Circular business model's adoption factors	-	
		What happens if the kitchen is damaged?	46

[1] This question is deducted from two CBC sub-parameters.