Gamification as a Means to User Involvement in Decision-Making Processes for Sustainable Buildings

By

Dr. Hanne Tine Ring Hansen, Søren Jensen Consultants

Professor Emeritus, Mary-Ann Knudstrup, Aalborg University Denmark

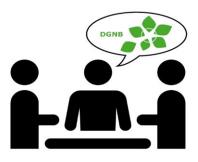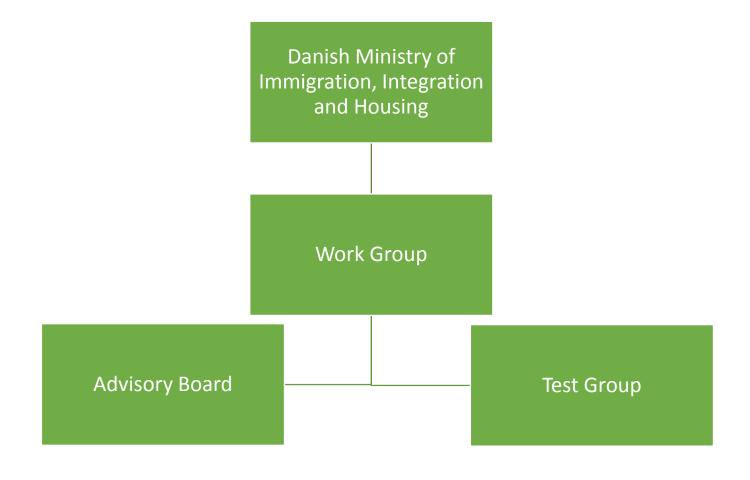Engineer, Stine Skøtt Pedersen, Søren Jensen Consultants

WHY?

- Need to improve early user decision-making on sustainable building projects

- Visualise the impact of decisions on different types of sustainable effects/qualities

- Improved ownership with residential democrates in the housing sector.

HOW?

PROJECT ORGANISATION

METODOLOGY

Explore

Collect
1, 5, 9, 12, 16

Understand
2, 3, 6, 10, 13, 17

Open

PROCES

Close

Think
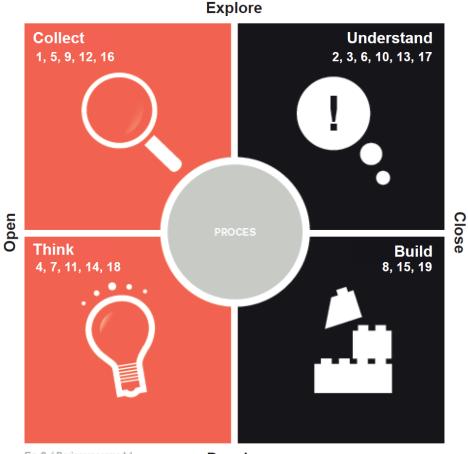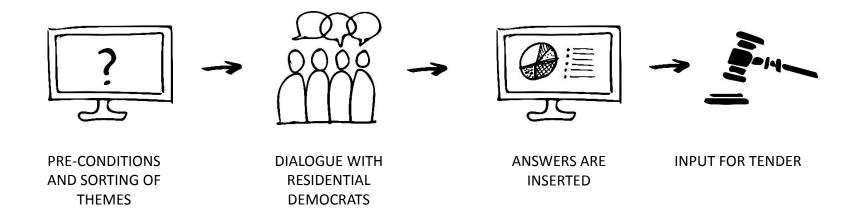4, 7, 11, 14, 18

Build
8, 15, 19
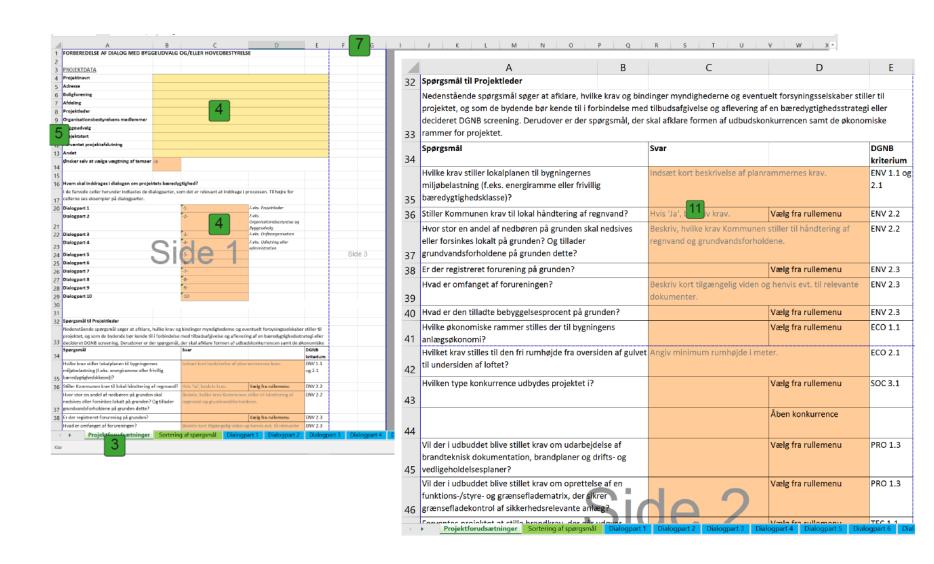
Fig. 3 / Designprocesmodel

Develop

1. Advisory board - what are the success-criteria for the tool?
2. Advisory board - which success-criteria are the most important?
3. Workgroup - how do we interpret the input from the advisory board?
4. Workgroup - what does the first sketch for the tool look like?
5. Advisory bord - what are your ideas for the tool based on the first sketch for the tool?
6. Workgroup - how do we understand the input from the advisory board and what do we implement?
7. Workgroup - how do we incorporate gamification and other relevant input?
8. Workgroup - first prototype of tool design
9. Testgroup - does the tool comply with our success-criteria? And do you have ideas for improvement?
10. Workgroup - how do we understand the input from the testgroup?
11. Workgroup - how do we accomodate the input from the test group?
12. Advisory board - presentation of tool development and ideation on what the analogue tool could look like
13. Workgroup - How do we understand the ideas from the advisory board?
14. Workgroup - How do we transform the ideas from the advisory board into a physical game?
15. Workgroup - Preparation of the tool for testing incl. building the final prototype
16. Testgroup - final prototype test - how does the tool comply with our success-criteria and how can we improve it?
17. Workgroup - How do we understand the feedback from the testgroup?
18. Workgroup - How can we accommodate the feedback in the tool
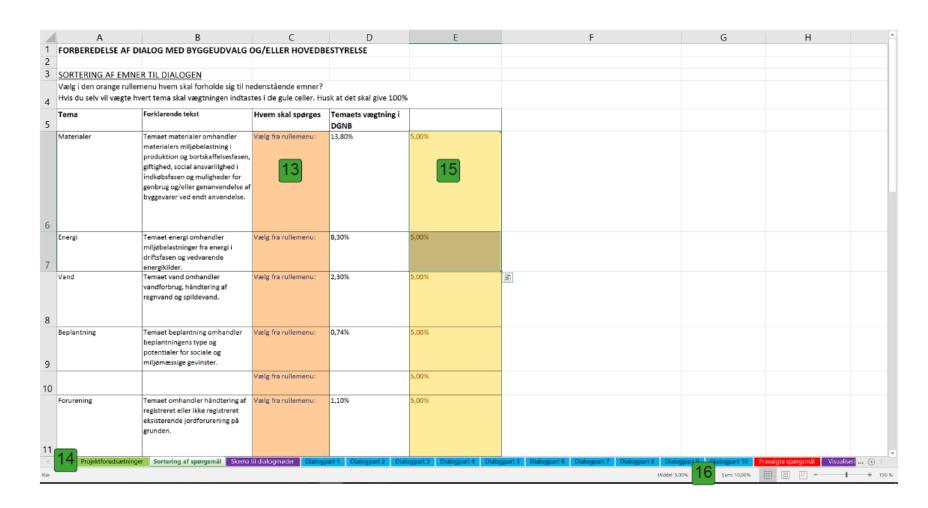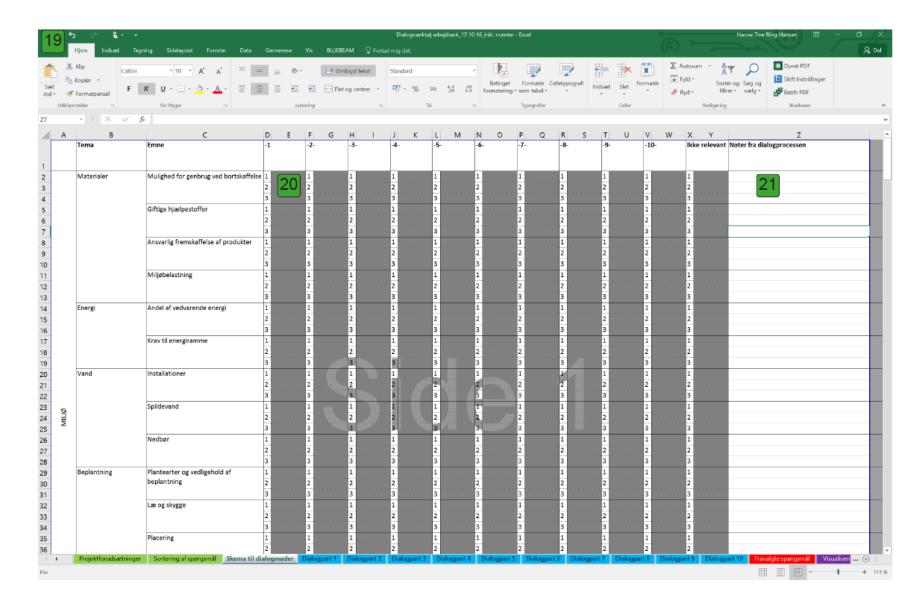19. Workgroup - building the final tool and demonstrating it

Based on: https://www.designskolenkolding.dk/en/design-process-mode

TOOL

TOOL COMPONENTS

PRE-CONDITIONS AND SORTING OF THEMES

DIALOGUE WITH RESIDENTIAL DEMOCRATS

ANSWERS ARE INSERTED

INPUT FOR TENDER

PREPARATION – PRE-CONDITIONS

PREPARATION – SORTING OF THEMES

PREPARATION – OVERVIEW

ANALOGUE TOOL (TEST VERSION)

DIALOGUE AND PRIORITISATION CARDS

CENTRICUBES

DIALOGUE BOARD WITHOUT CUBES

DIALOGUE BOARD FOR CUBES
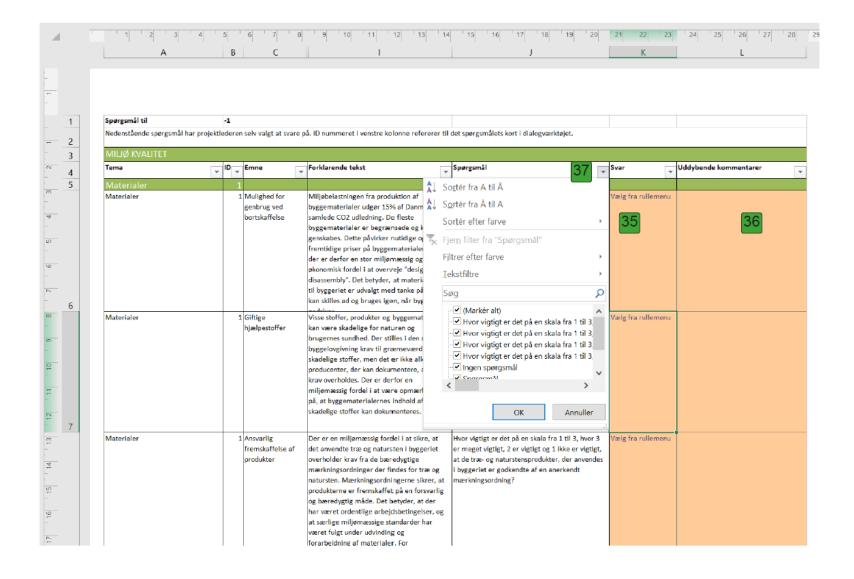
REVISED DIALOGUE CARDS
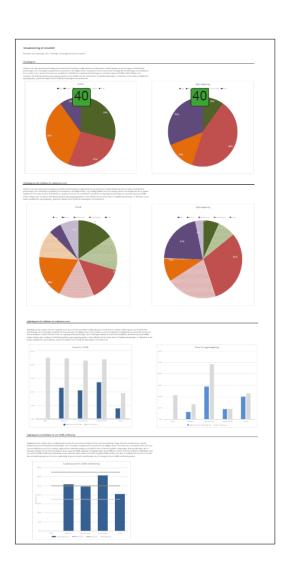
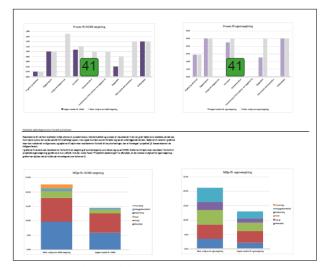# REVISED DIALOGUE BOARDS

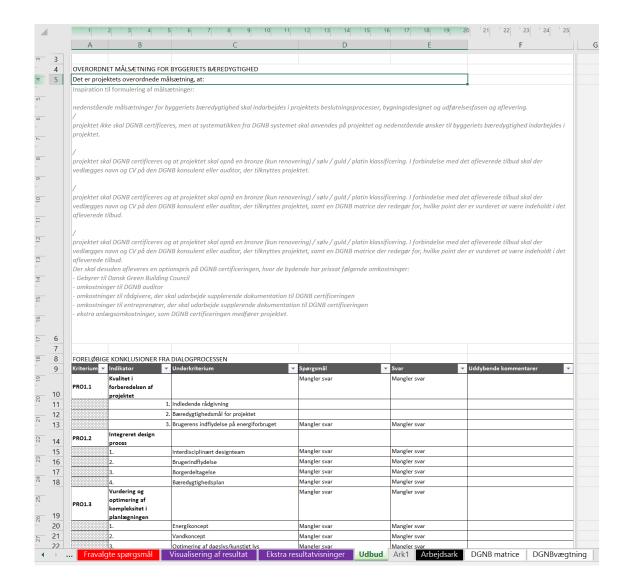# FOLLOW-UP – INSERT RESULT

FOLLOW-UP – GRAPHIC OUTPUT

Uddrag af 'Ekstra resultatvisninger'.

INPUT FOR TENDER

REFLECTION

FEEDBACK AND OBSERVATION

- Using analogue elements such as dialogue cards and Centricubes in the dialogue with residential democrats increases their understanding of sustainability and their engagement in the decision-making process,

- Physical activity increases the actors' remembrance and joy

- Gamification is interesting because it makes actors reflect on how to improve the performance of their decisions towards the project's sustainability profile and

- The tool needs to find a balance between abstract ideas and specific solutions.

DESIGN THINKING AS A METHODOLOGY

- Valuable input from Advisory Board and Test Group.

- Positive feedback from Advisory Board and Test Group

- The key to our success:
  - Be carefull to design workshops that enable valuable feedback via 'under-design' prior to meetings
  - Use input from workshops and meetings to shape your ideas
  - Test non-finished tools to ensure constructive critique and ideation

ACCESS THE TOOL

http://almennet.dk/nyheder/2017/5/baeredygtighed-i-oejenhoejde/

The tool will be available to the public from November 2017

ACKNOWLEDGEMENT

CONTRIBUTORS

The following people have contributed to the tool development either as part of the work group (WG), the advisory board (AB) or the test group (TG):

• Ole Nielsen (WG) and Jesper Toft-Nielsen (TG) , Boligselskabet Sct. Jørgen-Viborg

• Allan Werge (WG), Tania Andersen (WG) Peter Brix Westergaard (AB) and Per Kinly (TG), AL2Bolig,

• Anna-Claudia Erichsen, acelab (WG),

• Hanne Tine Ring Hansen (WG), Stine Skøtt Pedersen (WG), Ramboll/Søren Jensen Consulting

• Lau Raffnsøe, Danish Green Building Council (AB),

• Pernille Hedehuus (AB), MT Højgaard,

• Philip Naegeli Arnhild (AB) and Charlotte Algreen (TG), Lejerbo,

• Katja Adelhøj Lindblad (AB), Heine Krarup Møller (TG) and Jonas Hugo Stavad (TG) , Boligkontoret Danmark,

• Suna Cenholt (AB), PLUSkontoret arkitekter,

• Henrik Staun, Lund & Staun (AB),

• Lisbet Wolters, Vejle kommune (AB),

• Carina Hedevang (TG) and Carsten Kjær Christensen (TG) AAB Aarhus (TG).