

THE GLASGOW SCHOOL OF ART

Mackintosh School of Architecture
The Glasgow school of Art , Scotland, UK
PhD of Architectural Study

Research Title :

**Parametric design methodologies for complex buildings, with
particular reference to hospital design.**

Research Questionnaire Survey

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- For hospital design architects -

Research Brief:

This study focuses on the subjective use of CAD software applied in hospital design process in relation to the software's performance during design stages.

Questionnaire Instructions:

This questionnaire has two sections –

Section 1 allows the selection of one or more answers to each question.

Section 2 requires the selection of only one answer to each question.

*Please answer all questions.

Section 1 Please tick one/more than one answer for each question.

You will be asked about your professional backgrounds such as design media and software experience.

Design background

* Office Title: _____

1. How many years have you used CAD software packages?

- 1-2 years.
- 3-5 years.
- 5-10 years.
- Over 10 years.

2. Which of the following design media you use at the design process?

- Freehand sketches.
- Physical models.
- Conventional CAD (AutoCAD or Micro station) & 3D models.
- Parametric Tools – BIM software (Revit or Archi CAD).
- Algorithmic Tools – Grasshopper or Generative Component.

3. In which part of the design process CAD software is mainly used ?

- Design briefing process.
- Conceptual design stage/Concept formulation
- Evaluation/Testing stage
- Architectural drawing / Presentation
- Workflow with other design professional
- Analysis and simulation (Structure/Materials)

Section 2 Please tick only one answer for each question.

The questions are focusing on the feedback of design process involving in CAD software. They are divided into three catalogues - Design creativity, Design efficiency and Design evaluation.

Design creativity

There are two stages of design creativity will be questioned in this sector :

a. Creativity of process

– It presents the feedback during the process of creating concepts/designs.

b. Creativity of product

– It presents the feedback after the products/design scheme (floorplans, building shapes...etc.) been completed.

a) Creativity of process

a1_Design ideation/Fluency - (During the design process)

4. How many ideas do you think the CAD software has helped you to generate/produce with regards to the creativity process ?

(For example: The numbers of concept model/drawing.)

- 0-1
- 1-5
- 5-10
- Over 10

a2_Design ideation originality -

5. Do you think the ideas generated by CAD software are novel and unusual, i.e. statistically uncommon ?

- Very common
- Common
- Nor
- Uncommon
- Rare

a3_Design ideation variety - *(Variety between design ideas)*

6. How many genres of different design ideas were generated using CAD software for the creativity process?

(For example: Centralized layout is a genre which is different from linear layout.)

- 0
- 1-5
- 5-10
- Over 10

7. To what extent do you think that using CAD software has helped you to produce the finished scheme/product that you think are worth displaying?

- None
- Slightly
- Moderately
- Above average
- Immensely/Greatly

Design Efficiency

8. In which part of the design process does the deployed CAD software help you to save time?

- Design briefing process.
- Conceptual design stage/Concept formulation
- Evaluation/Testing stage
- Architectural drawing / Presentation
- Workflow with other design professional
- Analysis and simulation (Structure/Materials)

9. To what extent do you think that using CAD software improves workflow management during communicating with different design professionals (exp: Engineers and medical staffs)? * *To what extend ...means the level or effect here*

- None
- Slightly
- Moderately
- Above average
- Immensely/Greatly

10. How many different CAD software packages do you/ your practice use in the design process?

- 1
- 2
- 3
- 4
- Over 5

11. To what extent do you think that the database of building elements/ components (windows and structures details) that are readily available in the CAD software are being used for design process?

** To what extend ...means the level or effect here*

- None
- Slightly
- Moderately
- Above average
- Immensely/Greatly

Design Evaluation

12. To what extent do you think that the CAD software can help you to test the design concept?

- None
- Slightly
- Moderately
- Above average
- Immensely/Greatly

13. To what extent do you think that CAD software can help you in the presentation and visualisation of design concepts ?

- None
- Slightly
- Moderately
- Above average
- Immensely/Greatly

14. To what extent do you think that using the CAD software forces designers to standardize design process? * *To what extent ...means the level or effect here*

- None
- Slightly
- Moderately
- Above average
- Immensely/Greatly

15. To what extent do you think that by using CAD in the design process will encourage design dialogue and extend design idea discussions?

- None
- Slightly
- Moderately
- Above average
- Immensely/Greatly

16. To what extent do you think that using CAD software for environmental simulation can help designers make more efficient designs?

- None
- Slightly
- Moderately
- Above average
- Immensely/Greatly

17. To what extent do you think that the CAD software can help deal with complexity as a conceptual challenge.

i.e. make it easier to visualise, conceptualise and deal with curvy geometry.

- None
- Slightly
- Moderately
- Above average
- Immensely/Greatly

18. To what extent do you think that the CAD software can help the cost effectiveness of design schemes ?

- None
- Slightly
- Moderately
- Above average
- Immensely/Greatly

19. To what extent do you think that the CAD software *can help* design fabrications.

- None
- Slightly
- Moderately
- Above average
- Immensely/Greatly

The end of questionnaire

Thank you for taking time to complete this questionnaire, your contribution is extremely valuable and will help improve the CAD design in hospital practice today and its potential for future healthcare facilities.

All information collected will be kept strictly confidential for research purpose only and will remain anonymous.

If you have any questions, please do not hesitate to contact me via email on :

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