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How Juries Assess Universal Design in Norwegian Architectural School Competitions

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Abstract. This paper investigates how architectural school competition juries assess Universal Design. The method used is a case study of 18 recent architectural school competitions in Norway. The results show that most competition briefs ask for Universal Designed buildings. In 8 of the 18 cases, Universal Design is mentioned as an assessment criterion. In 11 of the 18 cases, Universal Design is commented on by the juries in the jury reports, but only in 3 of the cases, do the juries assess this aspect consistently on every competition project. The overall impression is that some amount of uncertainty looms concerning how Universal Design should be assessed in the competition stage. Based on the findings, future juries should concentrate on orientation and overview prior to technicalities and details.

Keywords. Universal Design, architectural design competition, assessment, school

1. Introduction

This paper aims to investigate how Universal Design is implemented and judged in Norwegian architectural school competitions. Understanding the dynamics and characteristics of architectural competitions have been object for several research. Also how juries work and what qualities they are looking for have been subject to studies [1,2,3,4,5]. Architectural values and evaluation criteria evolve over time [6,7,8]. Recent Swedish studies show no traces of Universal Design as an independent design criterion [9,10,11]. When judging, it is fully possible for juries to ignore or forget obvious and important design qualities e.g. focusing on saving energy and forgetting about daylight [12]. So, how do the juries handle the challenge of assessing Universal Design – if at all?

2. Defining Universal Design

First we should look more accurate on the term Universal Design. In their book "*Universal Design - Creating Inclusive Spaces*", Steinfeld and Maisel [13] discusses the different definitions of the terms Universal Design, Design for all and Inclusive

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Design. The authors propose the following definition: "*Universal Design is a process that enables and empowers a diverse population by improving human performance, health and wellness, and social participation*". Later in the book, the term Universal Design is discussed as an innovation process, in opposition to a design only complying regulations and accessibility. Lid [14,15] is describing Universal Design on three levels, using the terms macro, mezzo and micro level

Understanding Universal Design as an ongoing process is very useful when looking at architectural competitions. The architectural competition should be considered being an innovation process itself. The very reason to organize an architectural competition is to achieve maximum quality in a project. The idea is not to have a competition to see if anyone manages to comply the regulations, building codes and the competition brief. No, the idea is to achieve qualities beyond the regulations. An architectural competition will most likely result in different designs and solution – with different qualities. Additionally, a project's development from developing the building program until the building stage contains stages in which the project is in process and will (hopefully) be improved. Lid's approach to look at Universal Design at different levels from strategic to instrumental, is useful in the discussion of what level Universal Design should be solved in architectural competitions. Which challenges should be solved in the competition stage, and which challenges can be solved in the development of the winner project.

3. Architecture Competitions

3.1. Process, Roles and Organization

Architecture competitions has a long tradition, all way back to ancient Greece [16,17]. The modern architectural competition has many characteristics, and we will look into some of them relevant, but also limited, to the research question. There are three important roles in a competition; the client, the jury and the competitors. A typical process for a school project would consist of the following phases: 1) Programming: Functional program, space program, 2) Selection of the design professionals: Designing the competition: Type of competition, participants, jury composition, evaluation criteria and then the design competition: Different competitors execute design proposals. A jury assesses the projects and picks a winner, 3) Schematic design, 4) Design development, 5) Construction documents, 6) Contracting the contractor, 7) Construction.

For a design team to know what to design, and for a contractor to know how to calculate costs, a building requirement has to be developed. A school building is mostly a great investment for a typically Norwegian municipality, and there will be invested time and energy in deciding upon a pedagogic platform and chore values of the school organization. There will be developed a functional program – describing what functions the school building should contain, how they should work, and how different functions should work together. Normally also a space program would be developed telling how many square meters should be planned for each function. There can be great differences in how well developed these documents are. According to EU law there has to be set up some evaluation criteria. These should be considered mandatory to comment by the jury.

There are different types of architectural competitions. Often the choice of architectural competition is linked to the project's procurement type. Most common seems to be the two staged limited design competition. This fits to a Design-bid-build (DBB) procurement. In the first part of the competition architecture companies are asked to prequalify. In a typically Norwegian school competition, a number of more than thirty architecture companies will try to prequalify. The client will pick about 5 architecture companies to do the second part – the architectural design competition. In some cases there is a Design & Construct (D&C) procurement. In these cases, the competitors will have to deliver both a price for the construction of the project, as well as a design proposal. In these cases, a contractor will be collaborating with an architectural firm. A third variant is the so called PPP – public private partnership, where the competitors have to design, construct, finance and manage the school building. In these cases the architect will be part of a broad team of experts. PPPs are organized as negotiation processes, which means there will mostly be a dialog about the design [18].

Juries normally consist of people with different competences. In many cases, architectural competitions are run with the guidance of the National Association of Norwegian Architects, NAL. Like in other European countries, these type of organizations have requirements on how competitions should be executed to secure quality and a fear treatment of the design teams. One of these requirements is that NAL will pick one or more independent architects to participate in the jury.

In an architectural design competition all requirements in the building program are to be met. However, some requirements should be considered easy to be incorporated later in the developing of the project and others, more difficult. The competition also may convince the jury that not all requirements are possible to fulfil. This leaves the jury to decide which project is the best compromise.

Juries document their decisions, and the reason for their decisions through written jury reports. The reports are normally, signed personally by all the jury members. The competition report starts with a general view of the quality of the different proposals. Often the proposals will be compared and the juries' view on the benefits and disadvantages for different solutions will be discussed. Often, the mandatory evaluation criteria will structure the text. The general views end with an over all conclusion and recommendation of the winner project. After this section there is mostly an additional part where each project is commented separately and in more detail. Because the architecture competition is only one step in a project's development process, the jury should not only assess a design proposal's actual appearance, but even more its potential.

3.2. Assessing Architecture Competitions

Architectural values and evaluation criteria evolve over time [6,7,8]. The term Universal Design is relatively new with its origins in the concept of human-centered designs in 1960ies [13]. A game changer in Norway has been the development of the NS 11001 *Universal Design of building works* in 2009 [19] and then the *TEK10: Regulations on technical requirements for building work* [20]. This legislations have, so to say, forced clients and architects to plan Universal Designed buildings. When it comes to architectural competitions, recent Swedish studies show no traces of Universal Design as an independent design criterion [9,10,11]. In these investigations, the jury members are interviewed on what qualities they look for in a winning project.

Although different architectural qualities may overlap with Universal Design qualities, discrimination and Universal Design is not a theme as such.

3.3. User Participation

User participation can typically take place in the development of the competition program and in the design development stage. Except from the PPPs, there will be no dialog with the competitors during the architectural competition itself. When it comes to the assessment of the competition designs, this is the task of the jury. It is therefore interesting to investigate how the juries are composed. The jury may ask other experts or users about their opinion or expert analysis. This is often the case concerning economy and sustainability matters. Also users could be asked about their opinion although not part of the jury.

3.4. Universal Design in Norwegian Legislation and Adjacent Documents

The Planning and Building Act, the English version of "*Plan- og bygningsloven*" and *TEK10: Regulations on technical requirements for building work*, have detailed requirements – on a more operational level - to secure accessibility in building projects [20]. On a less detailed level – there is the table D.1 in the *NS 11001 Universal Design of building works* [19] "*check list for wayfinding strategy"* (Table 1). This could be regarded as highly relevant also when evaluating architectural projects.

Table 1. Five of the 13 check points in table D.1 in the NS 11001 Universal Design of buildings works; "*check list for wayfinding strategy"*

Plan lay out	Is it easy to create a mental map of the buildings plan lay out?
Zones	Is the building separated into limited zones of functions based on type of activities?
Differences	Is it easy to recognize the different zones?
Circulation	Is the planned circulation pattern clear and logical and according to the users' expectations?
Landmarks	Are there obvious landmarks at important and central places in the building?

4. Research Question and Method

4.1. Research Question

School buildings are interesting due to their central role in local communities. The school buildings host both a great amount of adults and children, not only for school purposes, but also for cultural purposes after school. It is therefore of the greatest importance that the school buildings are Universal Designed. Also the school buildings are official buildings, to some extend reflecting the municipality's values and knowledge. The research question is:

- What role does Universal Design play in Norwegian architectural school competitions?

To answer the research question, the following is examined:

- To what extent is Universal Design an issue in the competition briefs?
- Is Universal Design a mandatory evaluation criterion?

- How are the compositions of the juries?
- To what extend do the juries comment Universal Design in the jury reports?

4.2. Method

This study is based on the case study of 18 Norwegian school competitions held in the period 2010-2014. On the Norwegian Association's web site, there is a list of all different competitions from this period. The clients of different school competition have been contacted, or the necessary material has been found on the web. For 14 of the competitions the competition program and jury reports were available. For 4 of the competitions only the jury reports were available. The composition of the jury is documented for 17 of the 18 investigated competitions. Not all of the competitions have official jury reports. In the cases of PPP or DBB-procurements the jury reports are often scores and not text.

4.3. Limitations

Some of the investigated schools have a designated area for pupils with heavy disabilities. Any text related to these areas have been left out of this analysis, as the aim is to investigate the attitude and approach to Universal Design on general areas.

The competition briefs and jury reports contain text and comments related to parameters or elements beneficial to obtain a Universal Designed building. In some cases such elements occur in a Universal Design context, and in some cases such elements are mentioned in a more general context requiring or commenting on architectural quality. This could be parameters like short internal distances or clear and visible entrances. This study has not studied the different competition designs to judge the juries' comments on Universal Design – to see if they are right or wrong in their judgment, or to see what they missed.

5. Findings

5.1. The Competition Briefs

The investigated competition briefs are from 5 to 46 pages, on average 27 pages. Eleven of the thirteen examined competition briefs require Universal Design in general terms (figure 1). Six of these texts are introduced with a "Universal Design"- headline. Four of the texts specify certain groups to be considered, where mobility-, seeing- and hearing impairments are mentioned in three of them. Some text are short like "The school should be Universal Designed", or "there should be a strong focus on Universal Design in the project." One brief refers to the Norwegian Disability Discrimination act. None of the texts use any known definition of Universal Design directly. Eleven of the thirteen programs uses the term "Universal Design", and two of the thirteen briefs uses the term "equitable". Four of the programs specify that the Universal Design requirement also includes the out door area. Only one of the briefs writes about user participation related to Universal Design in the further project process. One competition brief refers to TEK 10. No other competition brief refers to any legislation, standard or guidelines.

When it comes to the more specific Universal Design related requirements, these are spread on 15 different subjects (Figure 1). HCWCs for pupils and Universal Designed school kitchen are mentioned in four of the briefs. Orientation-, clear entrances- and elevator requirements are mentioned in three of the briefs. The general impression is that Universal Design requirements generally are more linked to the pupils than the teachers, parents and others.

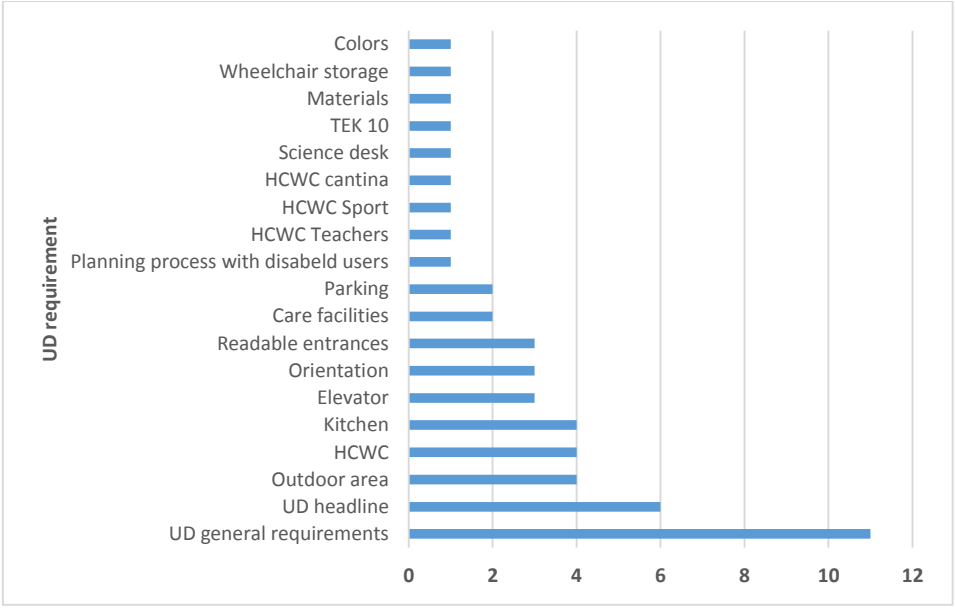

Figure 1: The different requirements related to Universal Design for thirteen of the investigated competitions. Eleven of thirteen competitions formulate a general Universal Design requirement.

5.2. The Assessment Criteria

Of the examined competitions, eight of the examined eighteen cases has Universal Design as a mandatory evaluation criterion (Figure 2).

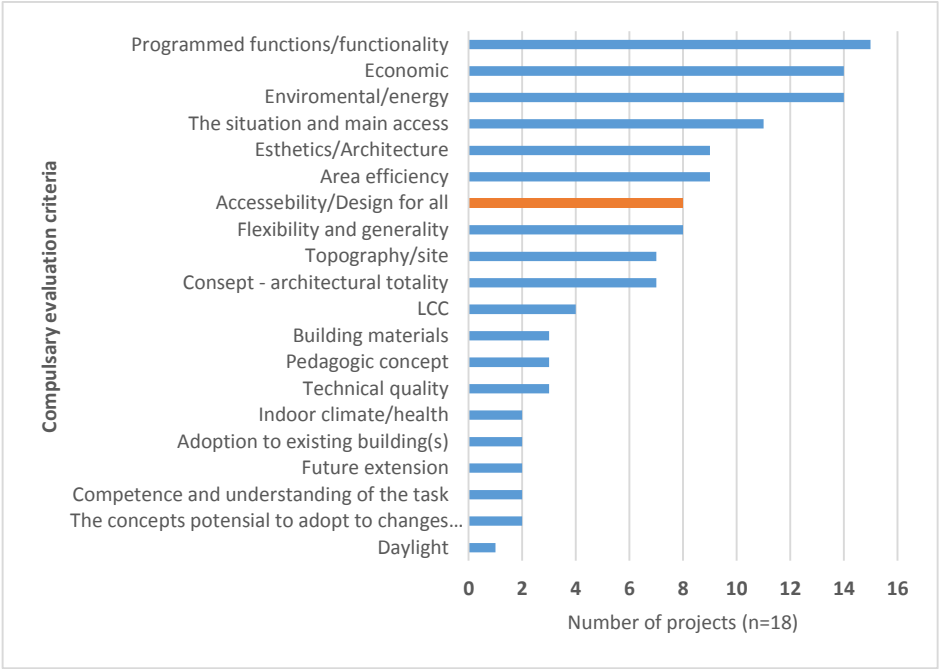

Figure 2: The figure shows the different mandatory assessment criteria from the 18 examined school competitions. The figure shows that Universal Design was a mandatory assessment criterion for the jury in 44% of the examined competitions (red)

5.3. The Composition of the Juries

The number of jury members vary from four members up to ten members. The average number of jury members is close to seven. According to the results of the investigated projects, external architects (24%) and school administration representatives (19%) are the most dominating jury members in numbers (Table 2).

Table 2 shows the average composition of the investigated juries. Architects represent the most dominating group, where as parents is the least represented. N=114

Group	%	Building professionals %
Parent representative	1	
External technical advisors	2	2
External administrative advisors	4	
Landscape architect	4	4
Teacher representative	5	
Headmaster	12	
Politician	12	
Building administration (municipality)	17	17
School administration (municipality)	19	
Architects	24	24
SUM	**100**	**47**

5.4. The Jury Reports

In the investigated material, Universal Design is commented in the jury reports in 11 of the 18 investigated cases. However, there are huge differences in the quality of these

comments. Of the total 68 competition projects, 24 were in some way, commented related to Universal Design. In only 3 of the cases do the juries assess Universal Design consistently for every competition project In none of the jury reports is Universal Design mentioned in the final conclusion. Only one jury comments Universal Design in the general part. According to the reports, the most discussed themes linked to Universal Design are the position of the elevators, the internal distances between different functions and the overall organization of the building (figure 3).

The jury commenting Universal Design in the general part writes the following interesting observation: "All projects have the potential to be developed into a Universal Designed building. However, the projects with the clearest organization and logistics will have an advantage when it comes to facilitate the projects for the mobility and seeing impaired persons." This observation seems to be shared with four other juries as they are also commenting on the overall organization of the building when judging Universal Design.

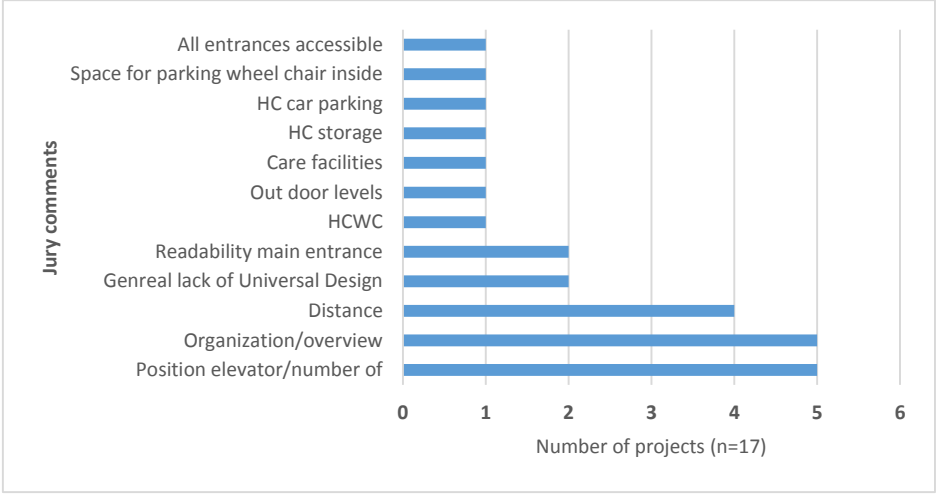

Figure 3: The figure shows the different UD aspects commented on by the juries. Position or number of elevators and the building's organizations/overview were commented the most.

Figure 4 shows the relationship between the focus on Universal Design in the competition brief, the assessment criteria and the jury reports.

- In the registered cases, where Universal Design is absent in the competition briefs, the juries do not comment Universal Design in the jury reports either
- Of eleven of the cases with Universal Design requirements in the competition briefs, Universal Design has been commented by eight juries
- In all of the cases with Universal Design as a mandatory assessment criterion, the juries have – in different ways – commented Universal Design
- In three cases, the juries comment on Universal Design despite Universal Design is not being a mandatory assessment criterion
- Only in three cases does the juries comment Universal Design consequently for every competition entry. Of the eleven juries commenting on Universal Design, ten has commented Universal Design in relation to the winning project

Project number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	SUM / %
Procurement	DBB	DBB	DBB	DBB	DBB	DBB	DBB	DBB	D&C	PPP	D&C	PPP	DQB	D&B	DBB	DBB	DBB	DBB	
Competition brief																			
UD general requirements	Y	Y	Y	Y	Y	Y	Y	x	Y		Y			Y	Y	x	x	x	11/78
UD headline	Y	Y	Y		Y	Y		x								x	x	x	5/36
Assessment criteria																			
Universal Design	Y			Y	Y			Y	Y		Y				Y		Y		8/44
Jury report and UD																			
UD elements commented	1	0	1	3	2	3	0	1	6	x	4	0	0	0	3	0	1	2	
Projects commented on UD %	20	0	0	60	100	50	0	40	100	x	100	0	0	0	60	0	25	50	
Winner commented on UD	Y			Y	Y	Y			Y	x	Y				Y		Y		8/47
UD in general comments or conclusion	Y									x	Y								2/12
UD resource group					Y			Y		x									2/12

Figure 4. The table shows the relationships between the focus on Universal Design in the competition brief, assessment criteria and the jury reports. Y/Green colour = Yes, Universal Design is expressed in the competition brief/assessment criteria/jury report. Blank = No, Universal Design is not expressed. X = Information is missing.

6. Discussion

6.1. Universal Design in the Competition Briefs vs. Universal Design in the Jury Evaluations

The results show different approaches in how the Universal Design requirements are expressed. A client can emphasize the importance of universal in more ways; using a headline, express the importance explicitly in the text, specify different user groups and specify more detailed requirements throughout the text. When analysing the findings of what the competition briefs and the juries focus on related to Universal Design, it seems useful to learn from Lid and split both the requirements and the evaluated elements in levels: A strategical level, and an operational level. The strategical level should aim at describing a buildings conceptual potential and prerequisites to be developed into a Universal Designed building. At the operational level, detailed requirements likely to be incorporated in any building lay out should be described. Based on the input from the competition briefs and the jury comments respectively, a

division between strategical and operational aspects may be a useful tool in future evaluations.

The nature of the strategic aspects implies that these qualities are more important and will count more than the operational aspects. The strategic aspects will secure a project to have the ability to be developed and refined related to Universal Design. The operational aspects will separately be easy to adopt into any project, but will not secure a projects over all potential to be universally designed. However, a project not fulfilling any of the operational requirement should make the jury unsecure of the design group's ability to develop a universally designed building. And on the contrary, a project both meting the strategic and operational aspects will be assessed to have both good solution, a good potential for further development, and will contribute to the jury's trust in the design team. A client should formulate clear strategic requirements. Operational requirements should be formulated due to contractual reasons and will play a greater role in D&C and PPP procurements. D&C and PPP procurements leave less freedom to the client to develop and require qualities after the competition stage. Also these procurements will be focused on fulfilling the contract, but not a bit more. Any open question about Universal Design questions will be decided by requirements in the building legislation.

6.2. Universal Design as a Mandatory Assessment Criterion

The findings show the importance of making Universal Design a mandatory assessment criterion. All of the juries have, more or less successfully commented on Universal Design where this has been mandatory. Some juries have judged Universal Design despite Universal Design not being a criterion, but in these cases, the responsibility of judging Universal Design is solely left to the random competence and interest of the jury. A systematic client approach should imply to express Universal Design as an assessment criterion.

6.3. Universal Design in the Jury Reports

For the cause of Universal Design – it is good news that Universal Design is judged in 11 of 18 cases. However, based on the jury reports, the general impression is that the juries could improve their assessment concerning Universal Design. Despite the fact that building professionals seem to dominate the juries (Table 2), many juries seem to either lack the interest, ability or tool to assess Universal Design systematically. When examining the 11 jury reports actually assessing Universal Design in some way, there is some good learning. The top 3 commented factors; position or/and number of elevators, the internal distances between different functions and the over all organization of the building are important aspects. Still, it would be interesting to read a jury report arguing with Universal Design in the final conclusion section. If we look at arguments like a logic overall organization, distance and readable main entrances, these values may overlap with common sense architectural values, and may seem unnecessary to comment additionally in a Universal Design context. This is partly true, but having one or more well organized buildings, still, when applying knowledge on e.g. how seeing impaired orient in a building, there may be important differences in the quality of the design proposals. If jurying is about evaluating a project's potential, this seems to go hand in hand with an evaluation at what we could call a competition's mazo level [14] and Steinfeld's definition of Universal Design as a process [13].

7. Conclusions

A client concerned with Universal Design should make it part of the mandatory evaluation criteria for the jury – to secure the jury assess this at all.

In most cases, and despite the number of building professionals included in the juries, there seems to be an uncertainty on how to assess Universal Design.

Based on the findings, a preliminary piece of advice to future juries is to focus more on evaluating a project's organization and its ability to demonstrate orientation rather than technicalities.

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