

# ALL GOOD ARCHITECTURE LEAKS

## Witticism or word of wisdom?

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### Abstract

The phrase “*all good architecture leaks*” can be traced back to Oslo School of Architecture (AHO) in the 1970s. The history and context of this phrase now form the basis for a doctorate study on design-related construction defects. Supported by social-anthropological thought models, the frames of interpretation for the phrase were examined [1]. As part of this examination, the driving forces of architecture as a subject were studied supported by simple explanatory models [2]. Data were collected through interviews and detailed literature studies, and resulted in deep insight into the problem area. The study revealed the existence of several phrases about the same phenomenon, i.e. architecture with quality deficiencies. One of these phrases came from a foresighted senior researcher at the Norwegian Building Research Institute (NBI) knowing that being creative and original in architecture can be risky: “*All prize-awarded buildings have multiple defects.*” Another was coined by the famous American architect Frank Lloyd Wright: “*If the roof doesn’t leak, the architect hasn’t been creative enough*” [3]. In a simplified manner, these humorous words of wisdom express a well-known and complex yet tabooed phenomenon. Through the study, two cultural representations have emerged – one belonging to the experimental avant-garde architects, and the other rooted in down-to-earth and practical architect engineers. These opposites nurture a tension that influences the phenomenon of construction defects. The revelation of this mechanism is significant in further research on the topic design-related construction defects.

**Keywords:** building defects, leakages, good architecture, noted, ignored.

## 1. INTRODUCTION

As an introduction to the topic, follows a short narrative: “*I first heard the sentence ‘all good architecture leaks’ some time in the early 1980s, when I was a young student at the Oslo School of Architecture (AHO). At the time, leaking houses was old news to me. To explain this, I would like to tell a story from where I grew up. In 1968, my parents moved into a new house with a flat roof. From the very first moment and as soon as it started raining into the snow up on the roof, we had to start removing the wet snow from gullies and joints. Inside, we had to place containers on the floor because of the water dripping down in buckets. Our house was located in a suburban residential area in the outskirts of Reykjavik and was designed by an engineer. It was not a great comfort to know that our neighbour’s house was subject to the same phenomenon. His house was*

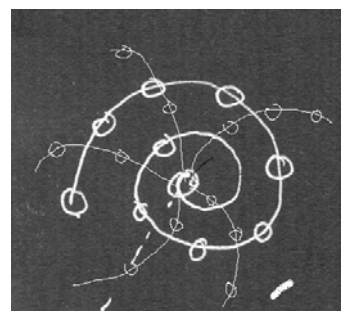
*designed by a well known architect and had been awarded a prize. When I went home on holiday and told my parents that according to my professor at Architect School “all good architecture leaks”, they were furious and a very emotional discussion followed. Once the storm was over, they asked a probing question about the education at this architect school, and what they had allowed me to study.”*

This story touches the most important elements in this case; the fact that human-made buildings carry inherent potential for defects and deficiencies. This often results in leaks, as mentioned above, but it also to people involved in the same project interpreting and referring to the same phenomenon differently. This appears to be related to the interests they represent.



**Figure 1 -2:** *The two buildings in the story, to left Bakkaflöt 1, from 1965, designed by architect Högna Sigurdardotter. To right Bakkaflöt 3 from 1966, design by building engineer Kjartan Sveinsson. (Photo Evar Hardarson)*

The study presented in this article is part of a PhD research project within the priority area Metamorphosis at NTNU in Trondheim. The topic for this PhD project is: Architecture and design-related construction defects. The purpose is to extract new knowledge on how construction defects come into being when new buildings are designed and built. Focus will be on the design process, where a majority of all construction defects originate, but also on the architect's work, as he is an important participant in the discussion on the construction's quality. The main question this research project seeks to answer is: *How and when in the design and production process does the construction defect come into being?* The method developed to research the origin of construction defects is called "The Nebula Metaphor". The basis of this method is that the design process is a highly complex matter which is difficult to describe and predict. It is defined as a co-called “soft or complex system”, i.e. a system or process with several elements and numerous interrelations [4]. The name – The Nebula Metaphor – is inspired by a personal and intuitive experience of the design and building process as a cyclic and complex phenomenon. In the imaginations, this process appears as a dynamic shape, a spiral belt of events and relations. The origin of the process, or should we say its genesis, is the formation of pioneer ideas. This phase constitutes the power centre of the process. To discover how and when construction defects come into being, qualitative research methods will be employed. A specific construction project with construction defects is selected. The researcher finds a physical construction defect and tries through examinations, document analyses, and interviews of the parties involved to shed light on the course of



**Figure 3:** *The Nebula Metaphor. The idea abode design and building process as a cyclic and complex phenomenon ore soft system.*

events.

In this article, results from subparts of the research project are presented. The main focus is on examining attitudes and cultural circumstances in the building industry which may influence the construction defect phenomenon. The idea was to explore the phenomenon behind the phrase "*all good architecture leaks*". The question is whether this phrase is a "witticism" or "words of wisdom". Several similar phrases about buildings with quality deficiencies have been revealed. One such phrase is: "*All prize-awarded buildings have multiple defects*" and can be traced back to a research institute. Another is credited to architect Frank Lloyd Wright, who said: "*If the roof doesn't leak, the architect hasn't been creative enough*" [3]. Interviews with relevant participants from this industry have been an important part of this study. The interviewees all had some connection to the topic; they were architects, engineers, researchers and lecturers at Norwegian universities. I also carried out literature studies to find out whether anyone else had studied this topic, and I found that there are very few scientific texts which deal with the topic of design-related construction defects [5].

Assisted by social-anthropological thought models the frames of interpretation for expressions are examined [1]. The driving forces in architecture as a subject are also studied through the reference "*Architects: the Noted and Ignored*" [2]. The study reveals several paradoxes in the way humans think and create buildings. This study has also been used to study how elite persons refer to the phenomenon of construction defects. Cultural representations have emerged from the wings, one belonging to the "architect culture" and the other to the "engineer culture". These two cultures try to entrench themselves in relation to each other and in relation to the discussion on concepts such as architectural quality and quality deficiencies. By use of explanatory models important driving forces were revealed, i.e. the artists on the one side and the practical architect on the other [2]. The revelation of these mechanisms appears to be significant to the interpretation of how design-related construction defects come into being.

## 2. THEORETIC BASIS

The study is theoretically anchored in studies within theory of science and social anthropology. These studies can be used to examine the frames of interpretation from which a sentence or a concept originates [1]. The focal issue is how resourceful people, often called ELITE people (i.e. persons who give statements on a subject by virtue of their position and exercise great influence when the content of an opinion is made) speak of a phenomenon. These people may be professors and lecturers at universities, as well as researchers and creative architects. To deepen the study, references explaining the main driving forces in architecture as a subject have been used: "*Architects: the Noted and Ignored*" [2]. According to this reference, Architects can be ordered on a scale from the artistic "avant-garde" to the practical "down-to-earth" architect / engineers. A majority of the architects are somewhere in the middle, between the extreme endpoints of the scale. However, in principle is that all want to be artists. This mechanism runs automatically and is supported by the cultural elite. The explanation is that artistic success confers infinitely more

status and holds out the lure of immortality, whereas the practical side can only bring in more money

Other concepts of analysis of scientific character are: Knowledge regimes, a concept from Foucault defining the arena from which the object should be discussed and handled. Figured worlds. Figured worlds is another concept, which refers to the implied knowledge that defines normal, rational and possible actions. Both concepts are taken from Gullestad [1].

It became clear that the problem area has been only marginally explored [5]. On this basis, and in accordance with methods developed through the PhD project, I decided to use an explorative approach and qualitative methods. For this reason, interviews have been central when collecting empirical data, where the theoretical anchoring in Kvale [6]. The following guiding questions were formulated: What are the origins of the cited phrases? What are their contexts and impact? What can these phrases tell us about attitudes and the cultural situation in the building industry?

The interviewees were selected qualitatively. The first were picked from the environments to which the phrases had been traced, i.e. AHO and NBI. Other interviewees were picked out based on tip while the interviews were being carried out. Due to my localisation in Trondheim, several interviews were conducted over the phone. Whenever possible, I met the interviewees in person. A majority of the interviews were recorded on tape, always with the interviewee's consent. Alternatively, notes were taken. Notes and tapes were used as the basis when writing reports for analysis and interpretation. The interviews were conducted between December 2003 and January 2005, a total of 10 interviews. Most of the interviews were conducted in connection with this article, some in connection with the data collection. In the final text, the interviewees are made anonymous by using fictitious names, because the topic is regarded as sensitive and unpleasant to discuss. I find it easier to refer to interview findings this way. Interviewees who are referred to through written sources, on the other hand, are presented with their full names.

In order to ensure a critical focus and as a quality tool for the analysis and the interpretation, certain concepts are employed. These concepts include *critical distance* formulated as "critical preservation of memories and experiences" [1], *critical reflection* on personal prejudices, and strangifying [1]. That involves seeing what is well known from a different or strange perspective. The strangifying can, if successful, puzzle people and trigger reflection. The final paragraph in this article is an attempt of such strangifying.

### 3. THE FINDINGS

This chapter gives an account of findings, both from the literature studies and from the interviews. For a further illustration of the problem, I have also included examples of buildings belonging to the category 'good architecture with construction defects'.

Defining good architecture or architectural quality seems to be a difficult task (cf. chapter 3.3). The discussion involves time periods, cultures and fashions, at the same times as the general value debate in society is reflected upon. The opinion regarding what constitutes good or poor

architecture is partly related to the general spirit of the time, but also to the so-called “good taste”, usually defined by the cultural elite of the subject. However, as time goes by and the buildings reveal their lasting ability and their qualities, some sort of agreement on the characteristics of quality and what may represent our cultural heritage is shaped.

In principle, the words *damage*, *defect*, *deficiency*, *mistake* or *failure* mean the same, i.e. some sort of deviation from a given reference level. However, these words have negative connotations in the ordinary language use. Therefore, in recent terminology the concept *quality deficiency* is used as a collective term. This concept is composed by the Latin *qualitas* (state, nature), which is commonly perceived as a positive term, and *deficiency*, which has negative connotations. The compound *quality deficiency* carries some of the same implications as the phrase "all good architecture leaks", i.e. a battle between the positive and the negative. A subcategory of quality deficiencies includes damage by damp or leaks. Water damage is the largest category – it makes up approximately 2/3 of all construction defects – and the most common cause is water leaks. This damage could be caused by damp being transported to the wrong place, based on given premises, i.e. into the construction or into residential rooms. The causes are many, leaky roofs or walls being the most common. A subcategory of water damage is damp accumulating inside the construction because the hydrogen pressure is too high. In addition comes poor or defective ventilation. This kind of damage has increased in recent years, mostly due to changed living habits, new construction materials and methods. Damp damage is troublesome, as it reduces the technical, aesthetical and functional life of materials and constructions. It also creates biological processes that result in mould and rot, which again cause health problems.

### 3.1. From Vitruvius to today’s architecture



**Figure 4 - 6:** *Leaning Tower of Pisa 1174, (Photo Tore Haugen). Falling water 1935, (Photo Edvard Horton). History Faculty building at Cambridge 1967, (Photo Dag Nilsen )*

Vitruvius Pollio, Roman architect and engineer, defined architecture using three concepts: "*Utilitas, Venustas, Firmitas*" [7]. In more recent terminology it translates to technique, function and form. This has been the prevailing approach to architecture up until quite recently. With the emergence of functionalism in the 1920s, new strategies and perspectives materialized. One of the characteristics of functionalism was that the ornaments had to go. The clean lines were pursued and the slogan was "the form follows the function". The functionalists also wanted to challenge the natural forces and to use experiments in accordance with the contemporary dominating view of science, positivism. One important characteristics of the functionalist style was the flat roof. One of the great men in modernism, the American architect Frank Lloyd Wright (1867—1959), experimented with form and material like other architects, often producing

interesting results. The word is that houses designed by Frank Lloyd Wright always came with a small present – one or more leaks from the roof, naturally causing furious owners. His humorous expression in this connection is quoted in an article on rehabilitation of his famous building Falling water in Mill Run, Pennsylvania: *"If the roof doesn't leak, the architect hasn't been creative enough,"* and when the owner of the building continued complaining about the roof leak, Wright said: *"That's how you can tell it's a roof"* [3]. For the design of Falling water, Wright was honoured by the American Institute of Architects with the description *"the best all-time work of American Architecture"* [8]. One of the most famous leakage histories involves Herbert Johnson, owner of Johnson's Wax. At the time when Falling water was designed, Wright designed a domestic house for Johnson in Wisconsin. The story goes that Johnson called Wright during a Thanksgiving dinner to complain about the leak from a skylight. The water was dripping down on their food. Wright in his chivalry answered *"move the table"* [3].

Another famous avant-garde modernist associated with construction defects is the British architect James Stirling (1926—1992). One of his most famous constructions is the History Faculty building at Cambridge from 1967. Charles Jencks describes the building as one of late modernism's most significant works with new and radical solutions and extensive use of glass [9]. Steward Brand, on the other hand, criticises the modern architecture and comments the issue with the following quote: *"The History Faculty building at Cambridge (1967) leaked torrentially, also dropped its roof tiles dangerously, and faced the wrong way. So the sun cooked its contents – people and books"* [8].

A few more examples are included to further describe the phenomenon of "the good architecture with defect". Many more could have been included, but these are representative and fall under the concept of "the power of example" according to Flyvbjerg's definition [10].



**Figure 7 - 9:** *The Nordic house in Reykjavik, the University building in Dragvoll Trondheim, (photo Ævar Hardarson). The Mortensrud church Oslo, (Photo Helge Solberg)*

The first example is the Nordic House in Reykjavik from 1968, designed by Alvar Aalto. The building is beautiful and well functioning, boasting many great qualities. It is regarded as an important monument in the architectural history of Iceland. Nevertheless, the owner of the building has been struggling with several roof leaks for over 30 years.

Example number two is the university campus at Dragvoll in Trondheim from 1978, designed by Henning Larsen's architect firm. It is an innovative building with extensive use of glass over an internal communication artery or "street". Damage by damp has long been a problem in relation to the glass-covered indoor street. *"As colleagues humorously put it – it has to leak to make the architect famous,"* says Per Knutsen, Norwegian architect and project manager for the building

project [11]. In an interview, Per Knutsen claims that leaks also occur in ordinary buildings, the ones nobody talks about.

The most recent example in this category is Mortensrud Church in Oslo from 2002, designed by architects Jensen and Skodvin . This building is praised for its high architectural quality and has been awarded several prizes, including three international prizes for outstanding architecture, but it is also associated with leaks. The building project was discussed in an article with the following headline: “*The church that became a constructional hell*” [12].

### 3.2. The phrases’ origin and context

In this chapter, findings from the interviews are described. The first interviewer is called Thorvald. He was a teacher at AHO in the 1970s and 1980s, and remembers the phrase “all good architecture leaks” very well, but he did not know where it came from. He points to possible connections to visits to England in the 1970s with the students, where constructions by James Sterling were in focus (see previous chapter). The next interviewer is called Johann. He studied architecture at AHO in the late 1970s and early 1980s. Johann associates the phrase quite clearly with Professor Sverre Fehn, since he heard professor Fehn utter this phrase himself. Sverre Fehn (1924) was a professor at AHO from 1971 to 1995. He is one of the most distinguished architects in Norway with a long list of publications. He has also been awarded several national and international prizes. Sverre Fehn is characterised as an avant-garde architect and supporter of the international school, yet still having bonds to the national movement (see report later in this chapter). Several interviewers referred to Sverre Fehn as an inspiring lecturer, with a sense of humour bordering on the absurd. The phrase “*all good architecture leaks*” is given particular meaning coming from Fehn’s own lips, as it is commonly known that some of Fehn’s buildings had construction defects, including leaks. In the interview with Johann, we are told that several phrases concerning the same phenomenon exist. He mentions Mortensrud Church in Oslo, reported to “*leak like a sieve*”. Johann was not familiar with the phrase “*all prize-awarded buildings have multiple defects*”, but in his opinion this phrase could be interpreted in a positive way for the architects, implying that inventive architecture was particularly prone to construction defects because when borders are traversed, room is created for new architecture and eventually new technical solutions. Johann used the expression “*those who venture wins*”.

The next interviewer was called Bjørn, a former student at AHO from the 1980s, who clearly recalled the phrase “*all good architecture leaks*”. Bjørn said that when this phrase was uttered, the speaker often added that this did not necessarily mean that houses with leaky roofs were examples of good architecture. He associated the phrase with Knut Støre, lecturer at AHO. Bjørn also refers to Wright's famous utterance “*move the table*”, which also was around at the time. Knut Støre lectured at a department called Bygg 1 (Building 1). He is also described as a great humorist. Apparently, Knut Støre proclaimed this phrase both during lectures and when correcting papers, as a sarcastic remark to the international style. To grasp this and the situation at AHO, reference is made to Karl Otto Ellefsen who described the conflict between two groups or schools after the war [13], both represented at AHO. This conflict also existed in architect firms and other schools. The issue was the international style on the one hand and the national style on

the other. At AHO, these opposites were represented by the founding fathers Arne Korsmo (the international Korsmo School) and Knut Knutsen (the national Knutsen School). The conflict is described as a kind of internal debate or dualism between leading persons with different architectural views. According to Karl Otto Ellefsen, the Norwegian architects inherited the “artist role” from Korsmo, while the down-to-earth and practical Knutsen School won the battle [13]. Sverre Fehn belonged to the Korsmo School while Knut Støre definitely supported the Knutsen School since Bygg 1 was seen as the Knutsen School’s most important bastion. The two lecturers’ comments to the phrase “*all good architecture leaks*” should be seen in this connection.

The second phrase, “*all prize-awarded buildings have multiple defects*”, was traced back to people working at the Norwegian Building Research Institute (NBI) in Oslo. I first contacted a construction defect senior researcher at the institute, called Ole. He was familiar with the phrase “*all prize-awarded buildings have multiple defects*”. He claimed this phrase was a witticism that had emerged in the work place, but was based on the reality that several prize-awarded buildings ended up in NBI’s archives of construction defects. He said that the more the architects work on the building to create new solutions, the greater the risk of construction defects. Therefore the logical thing to do would be to follow up with massive technical support, but this did not happen. Ole had heard the phrase “*all good architecture leaks*” and claimed that both phrases described the same phenomenon. According to Ole, it is unlikely that the phrase “*all prize-awarded buildings have multiple defects*” ever will be tested out in a research project, despite this phrase sounding like a research hypothesis. That would have created too strong reactions among “*the breed called architects*”, according to Ole, and the Building Research Institute would not profit strategically or financially from such projects.

In order to check the spread of these phrases, more people were interviewed. It has been established that the phrase “*all good architecture leaks*” is unfamiliar to most architects at NTNU. Two lecturers at the Faculty of Architecture who were interviewed had heard the phrase “*all prize-awarded buildings have multiple defects*”, uttered by leading persons from the building research environment in Trondheim. One of them thought the phrase was a research hypothesis. Both interviewees expressed the view that the two utterances reflect two groups with opposite interests and could be interpreted as an expression of a certain arrogance and hostile attitude towards each other.

### 3.3. Architectural quality

A relevant reference in this debate was the book *Arkitektonisk kvalitet* (Architectural Quality) by Arge and Bleiklie [14]. This book discusses how good architecture or architectural quality comes into being. The main conclusion in this book is that this happens in the interaction between builder and architect. The book’s analysis material is built on case studies of four Norwegian, prize-awarded buildings from the 1990s. Both architects and builders were interviewed to find out what characterizes the processes where architectural quality is created. The main criteria for the case selection are that the building project has been awarded a prize, has been published in the architectural press and was designed by renowned architects. I interviewed one of the authors, Kristin Arge. During our conversation, it became clear that construction defects are not discussed



as a topic in the book... For this reason, no knowledge was available about the selected and prize-awarded case study objects as to whether or not they have construction defects. According to Arge, this was not a part of their field of interest, but she recalled a remark which touched upon this problem. A project manager, who was interviewed in connection with the study of one of the case objects, mentioned some high-risk technical solutions and concluded: “*we will have to live with that when we are dealing with great architecture.*” During the interview, we discovered that examining prize-awarded buildings with construction defects could be of great professional interest, particularly since this type of research is non-existent. This would involve looking at the evaluations each jury made as regards quality – including quality deficiencies. Arge was familiar with the phrase “*all good architecture leaks*”, but had never heard the phrase “*all prize-awarded buildings have multiple defects*”, despite having worked at building research in Oslo where the phrase originated. She said these phrases could be interpreted as expressions of a certain level of hostility towards architects. Such attitudes are common among engineers, including those who work with building research, because they feel that architects are not concerned about technical solutions, all they care about is aesthetics, according to Arge. She claimed that architects and engineers have a love and hate relationship.

### 3.4. From witticism to words of wisdom

To find out whether the phrases had been discussed in the media we conducted an Internet search. The phrases were not found, but we did find a dissertation from NTNU dealing with construction defects. The dissertation was reported in the Norwegian newspaper *Aftenposten* 31 June 2002, and the magazine *Forbrukerrapporten* (lit. The consumer’s report) wrote the following: “*prizes are awarded for good architecture, but unfortunately very few prize-awarded buildings have outstanding technical solutions, Mørk writes in his dissertation*” [15]. To examine the basis for this claim, and because it resembled the content of the phrases discussed in this article, the dissertation was procured. The dissertation was on classification and mapping of construction defects with emphasis on quantitative collection of data. The point of interest was that the quotes in the media were taken from a minor paragraph from a large and extensive dissertation. There were no references pointing towards any research or findings from the literature on construction defects which could have been the basis for these claims. So on what were the claims based? Is it possible that this so-called witticism from the Research Institute “*all prize-awarded buildings have multiple defects*”, had escaped the closed laboratories and entered the public sphere? Bruno Latour is often quoted with it is difficult to come from being right to having right [16]. Could Latour’s principle, in reverse order, have manifested itself?

### 3.5. The two cultures

Several findings point to a tense relationship between architects and engineers. This is strongly emphasized with the phrase “*all prize-awarded buildings have multiple defects*”. Expressions such as “hostile towards architects” and “love and hate relationship” are employed. Both expressions could be interpreted as statements revealing two groups with opposite interests. There seems to be tension across institutions and inherited from one generation to the next. The

architect thinks the engineer shows little respect for the noble art of architecture, while the engineer claims the architect does not understand engineering. To some people, the phrase "*all good architecture leaks*" is evidence that architects are not interested in technical quality. Several findings suggest two ways of thinking or two cultures, as P.C. Snow described in his essay "The two cultures", where he elaborates on the gap between Natural Science and the Humanities [17]. Students in Trondheim tell jokes and stories pointing in the same direction. One such story is about the engineering student envying the architect student his free and playful studies and later takes revenge. One expression confirming these different ways of thinking is taken from an interview with Sverre Fehn where he talks about his childhood and why he became an architect: "*One of [my parent's] close friends was an engineer and taught at the technical college in Trondheim. My parents were very interested in hearing about the conditions there, about the engineering education and the field of engineering in general, and finally, my father asked: What about the architects at the school? The engineer answered: "Architects, they never study, they just run around with large hats and enjoy themselves."* It was then I decided to become an architect" [18]. Through this discussion it has become evident that there is a cultural gap between architects and engineers. This gap could also be described as an internal tension between the few and famous artists and the numerous practically oriented architect engineers, as described by Prak [2].

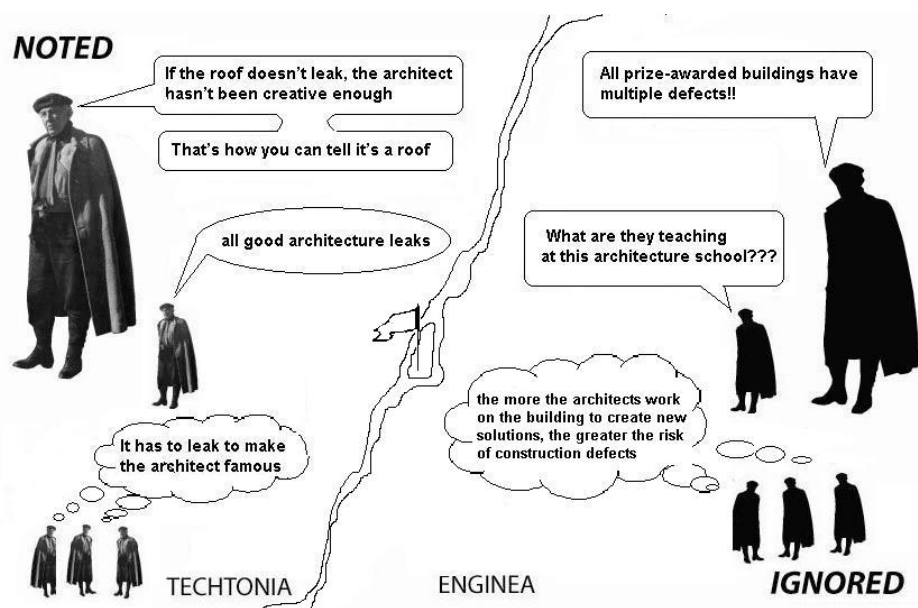
### 3. CONCLUSION

These phrases are undoubtedly humorous, but they also carry a great deal of wisdom. The humorous and deep element in the phrases are the paradoxes they reveal about human ways, but also the fact that constructions created by man have inherent paradoxes, i.e. they could be simultaneously good and poor. The history of architecture includes several such paradoxes, such as the famous Leaning Tower of Pisa and the Opera House in Sidney, which both are major constructional scandals, yet success stories and landmarks. Less famous buildings in the same category which are mentioned in this article are Falling water, History Faculty at Cambridge, The Nordic House, the University campus at Dragvoll, and Mortensrud Church. However, construction defects, including leaks, also occur in ordinary buildings, as reported in this article. A Norwegian proverb seems to be appropriate here: "When it rains on the vicar, it will drip on the sexton."

Both main phrases have been traced back to institutions producing knowledge, that is, a school of architecture and a research institute. The examination of these phrases has been used to study how elite persons refer to a phenomenon and to each other. A situation has emerged from the wings which according to my references could have several names. Some call it two knowledge regimes, while others call it two Figured worlds [1]. The concepts include cognition models both for concrete situations and abstract ideas, where one belongs to the "architect culture" and the other to the "engineering culture". These two "cultures" try to position themselves in relation to the other. This emerges quite early from different attitudes to concepts such as architectural quality and quality deficiencies. If employing Niels L. Prak's explanatory model, important driving forces could be indicated [2]. On the one hand, there are the few "avant-garde" architects who constantly try to create something new, experimental and revolutionary. They have their

artistic reputations to protect and seek acknowledgement, as this quote implies: *“it has to leak to make the architect famous.”* On the other hand, there are the many "down-to-earth" and practical architect engineers who occasionally have to give their frivolous, artistic colleagues a flick. It appears, however, that both groups live in a mutually dependent relationship, where one has its living of the other's occupation. The revelation of these mechanisms are significant to further research into the topic design-related construction defects and an understanding of the PhD project's main question: *How and where in the design and production process does the construction defect come into being?*

Finally, the principle of “strangifying” is employed: *Somewhere, in the great universe, there was a planet called Architectura. This was a so-called different planet because it was flat as a pancake and consisted of two areas divided by a rift. These areas were called Techtonia and Enginea. The rift, or split, as some called it, was at times visible, but other times it was beyond any observation. This rift was surrounded by myths regarding its age and origin. Some stories referred to it as a construction defect, while others interpreted this phenomenon as an entrance to the hidden resources of the planet. But the inhabitants of Architectura did not like this rift – they dared not cross it and many tales of the situation on the other side were created. They say Techtonia was so beautiful, so enchanting, while Enginea was safe and stable.*



*Figure 10. . The Theory “Noted and Ignored” related to the sentences analysed in the article*

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