

AS224689

## **Working with architects – a gap analysis**

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### **Description**

The architecture field depends a lot on creativity - making a building out of initially tiny ideas. For this we have architects. While the tools of architecture have changed a lot over the years, architects surprisingly seldom have. Will they survive the digital transformation if just the mention of artificial intelligence elicits frowns? Implementing software in a field where almost no one is interested in it is like educating people about driving when they hate cars. To make this easier, not only for them and for us, but also for the technology providers, we want to talk about why they dislike the technology so much, and how to work around that. We believe that the way to both better software and better houses comes from better relations - and this class will be a crash course in how to achieve those relations.

### **Speakers**

Nina Borgström is the experienced one in this duo, known for implementing Revit in Sweden and bringing human and technique together. Apart from her daily job as the director of digital design and BIM at one of the world's biggest architecture offices she is also a licensed teacher and instructor of kundalini yoga.

Maria Laakso is then the other one. Except from her work as a part time architect and part time BIM manager she is known for columns about both digitalization, architecture and almost any given thing that comes to her mind. What she lacks in experience she makes up for in outspokenness.

## Prologue

This handout relates to the class only in topic and not in arrangement. If you liked the presentation there will be an upload of all slides for you. If you want to bring back what you learnt from the class we recommend you to download the handout for the workshop *Surviving the architecture field – a co-creating workshop* (AS224524). This handout is the third and final part of our bim+architecture hat trick and it is a story told by Nina Borgström about the challenges, the solutions and the learnings from years of implementing BIM in an architecture company. Thank you so much for your attention!

## *From 2D to BIM - A multidimensional transformation*

To achieve a transformation where different people are involved in different aspects requires boldness, resources, compassion and a lot of patience. Transferring from flat drawings to BIM is that kind of change that goes into the core of people's work method and all layers of a company. During this journey I have learned valuable lessons about myself, others, the industry, my company (White Arkitekter) and transformation as a process. I now aim to share the most important lessons with you.



*2011*

When I started working at White Arkitekter 7yrs ago I planned to have BIM fully implemented in 2-3 years. I had just finished a huge transformation project at Myresjöhus - implementation of BIM from early stages all the way to machine codes in the factories. It took five years to get all in place - processes, technology, methods, competence and most of all **attitudes**. I felt so confident that it could be done a lot faster now with all the experience of what went wrong and what went right at Myresjöhus. One of the most important learnings I made was to start engaging everyone in the beginning and keep inviting people in throughout the process.

## *Starting off!*

Already the first months at White Arkitekter I mapped the current situation by interviewing as many people as possible, at that time 500 employees. The decision to implement BIM had been made about a year prior to my arrival and now I wanted to understand why and how far they had come. After a long time and many cups of coffee, it turned out we had to recreate both **the why, the what and the how**. People needed clear reasons and specific strategies in order to take the first steps towards BIM. The reasons fell into three different categories:

- 1) The world outside – BIM was here to stay, some clients were already at the time requiring it and students were learning these new methods at school. Who wants to fall behind in the general development?
- 2) Business – could this be a motive to re-think our hourly rates? This could lead us to business models that means larger margins that can be used to create even more stunning and sustainable architecture with architects, specialists and engineers that are not stressed out about billing hours.
- 3) The role of the architectural practice – the complexity of building projects was growing, there were new regulations and mandates to combine into the design process by the minute. A BIM approach can simplify wise decisions by using simulation tools and computational design and by stepping away from old 2D drawings we could now communicate better with the clients with far few misunderstandings.

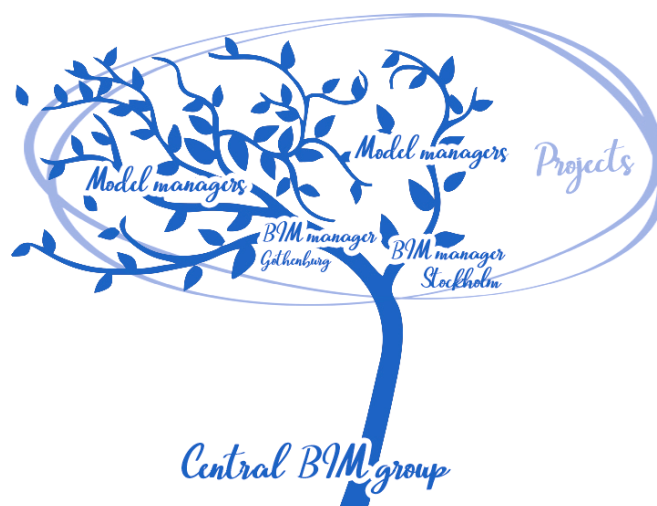
The why-and-how research also contained a strategy on how to get from **2D to 3D to BIM** and achieve the best possible values. The core of the strategy was to combine project specific development with standardized methodology development. And by having a look at the business model. A big challenge was for on-going project to feed in to the development of standardized way of template-thinking, and ofc vice versa, when in the mean time creating new services to offer our clients.

## *The 3 BIM missionaries*

We were three persons who started by organizing our Revit development as well as making our first effort to create new business models. We had 2 projects that founded the base of our methodologies - Tele2 arena and the ongoing project Nya Karolinska Sjukhuset, called NKS. Both of them considered **mega-BIM-projects** even today. What we identified for new business opportunities were 3D collaboration, visualization, cost calculations and energy simulations. Together with our own research-and-development-group specialized in computational design we developed projects to get people to dare implement all sorts of BIM in their projects.

## *The things that worked out according to plan*

- 1) Most important for our success is the way we learned to **attract the best BIM competences** on the market. Many of them felt pretty lonely in both their projects and their organizations and we were able to hire several of these heroes and give them time and resources to bloom. The model was based upon the fact that all of us worked in projects parallel with the strategic development of technology and methodology. This way we financed the transformation investment at the same time as we kept the competence and experiences updated.
- 2) Early, we created **a help function within Revit** in order to make our methodology easy to find and at the same time simplifying collaboration with co-workers.
- 3) The strategy in the why-and-how-research has been a great support from 2011 and throughout the process in each years planning and budget work
- 4) Another early action that had great impact on the success was that we recruited our own BIM training expert and stopped hiring it from external partners. We saved a lot of money and time by making our own methodology and BIM-management part of the training. The methods have now evolved further within the organization in order to ensure frictionless flow of information, support and need between projects and central methodology- and business development. That flow has been described as a tree where the central BIM unit is the root system responsible for the overall digital design process, each big branch is an office with a BIM manager and the smaller branches are projects where model managers takes responsibility over the project specific methods. When creating that infrastructure we hade to define new roles; BIM manager and model manager. This has been a valuable picture for us to describe our way of reaching the whole organization. All training is held by the BIM manager in each office and is synchronized between the different studios within White Arkitekter.



## *What was a bit more complicated than anticipated*

Already 2012 we educated the project management group at White Arkitekter. Teaching basics about BIM and what it could be used for and why it was good stuff. The purpose was clear - to get more people to dare to try BIM in their projects. They were positive while leaving there but still ended up giving the responsibility to the BIM manager or the projects model manager and by doing so contributing to **the creation of a new BIM-silo within in the industry**.

Today, 6 yrs later we are planning to perform a new training for all project managers that aims to support them to plan the project from the digital presumptions and possibilities in a way that leads to values for both us and our clients. This time the motivation has changed from interesting to necessary due to clients rising requirements and the overall digitalization.

From this we learned that timing is so important, training is (almost) nothing without practice and that often you grow through responsibility rather than education.

Just as with the training for project managers the digitalization has been sort of an on-and-off-part of our internal business education throughout the years but turns out to be more important than ever now.



From the first day of this journey **we've been talking about business development** and it was described in the strategy part of the the why-and-how-research. Never the less we haven't got to this for real until this last year. I think there are several of reasons for that, the most important being the high pressure in the industry - when everything is fine it is hard to see the need for changes. Another thing is the need for knowledge about BIM and digitalization among the lead positions to be able to see the deals in front of them. What we learned from this is that sometimes it's necessary to educate before you can convince and when bringing something so ground breaking as all of these new methods really are into a, more than you would think, traditional field is that it takes **a lot of patience**.

I know a lot of people working with BIM, both friends and colleagues in the architecture field has experienced a lot of frustration and lack of appreciation due to be sort of assisting-the-real-thing, this has made huge damage in a lot of firms. Therefor I would say the most important thing of all is for the management to have knowledge and insight of all parts of the company – even the indoor BIM group.



White Arkitekter is an international multidisciplinary architectural practice with studios in Sweden, Norway and UK. This highly influence the complexity of the transformation! The central BIM unit must develop methodology for **different disciplines** as well as for **various national standards**. It has been hard to find models and resources to manage this kind of complex development and it has taken way longer time than we hoped for to get everything in place for everyone.

## *What would we change, knowing what we know today*

- 1) I would for sure have demanded not only the managements full support in the transformation plan but also their **participation** in the work. The role of the central BIM unit should have been made clear from the beginning and consciously developed together with the management throughout the process. That way we could both have learned from each other and our interests could have merged in a smooth way.
- 2) I have learned that a complex transformation takes 3 times longer time than I think.
- 3) Compassion, respect and communication are the main qualities that is needed to succeed with a transformation in a way that all participants feel comfortable with. We must meet one another with these qualities - **not blame nor frustrate**. As a leader of the transformation team I wish I had worked more with practicing these qualities within in the team and also requiring the management of the company to participate in that as well.

## *Completely unnecessary*

Trying to convince people that were not ready to listen - **that is a complete waste of energy**.

## *Unexpectedly successful*

- 1) Working with BIM level 2 certification or compliance has proven to be a door opener to establishing competence requirements of BIM and digital design process items in all roles in our projects as well as career paths for digital specialists.
- 2) Implementing VR took 3 months and it's astonishing how easy technology and methods can be implemented when they create obvious values to a lot of people. All by a sudden architects got a really vivid design support, clients got to understand the design and collaboration was made so much easier.
- 3) Me becoming a Yoga instructor during these 7yrs have proven to be a life saver to myself and my family. I also believe that the yoga approach to life and people in general have proven to be a great part of me still being part of Whites transformation team.
- 4) Talking about the human in BIM and digital design as well as creating value with technology and how important true communication is has influenced the adaption in a positive way.

- 5) Our new strategy for digital innovation that aims to develop technology, people and business in these times of rapid changes. Our innovation model has been a success, more than twelve internal research labs have been completed this year. Everyone at White Arkitekter are together with colleagues and or clients invited to apply if they want to explore any of the digital aspects we have pointed out as a focus in the strategy. A digital coach has been appointed to every project to ensure support throughout the process and to ensure that the project is evaluated and, if relevant, scaled. The model is all about thinking large, start small, fail fast and scale big. The strategy has also worked as a catalysator to get business development going and in December we will be ready to launch about 10 new business offers.
- 6) All the strategy made 2011 has proven correct regarding the why and what but the how has taken about 3 times as long as estimated mainly due to not focusing on the business perspectives and the silo effects created early in the BIM implementation process. It's natural for me to draw parallels to the rest of the industry. I believe that the building and facility management industry as a whole is using about 20% of the full potential of BIM mainly because we are not tearing down silos nor creating new business models. The CEO of White Arkitekter might be right when she says I am always 3 years ahead in my visions - 2015 I was talking about the digital awakening, and now it's happening.