



# A new technique simplifies project planning for Buskerud Betongvarefabrikk

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**Tight time pressures characterise those who supply prefabricated building elements in the Norwegian market. Buskerud Betongvarefabrikk have solved this problem by automating the process and in this the planning and design is key.**

The building industry in Norway is driven by short lead times and the market is very demanding.

- It is absolutely vital to deliver exactly on time to a very high quality, says Heine Bjorndal. The demands have increased dramatically in recent years. Heine is the project leader at Buskerud Betongvarefabrikk and can testify to these tougher times.
- These days there is little recognition that planning, manufacturing and control actually take time.

Often the planning work is a stage where time is very short and there is usually insufficient time from when we start the project to when we deliver the completed unit.

In the factory one works with the whole supply chain for the prefabricated concrete elements, from the planning and design, to production and control. The units are used in buildings, roads and other infrastructure projects. A considerable number are adapted to suit the customer where one often combines large elements with beam systems and other components. In particular Heine mentions a complex project where a ten meter double wall was prefabricated as part of a much larger development in 2014.

## Automated production

One way of meeting these tough demands with short lead times in the building industry is to be more efficient. At Buskerud Betongvarefabrikk

this is achieved thanks to the family of BIM software IMPACT.

- It is the tool to sort out these problems, reckons Heine  
In the two years since we invested in the software we have had a clear purpose.
- We needed to automate our production, from planning to completion of the production drawings.

An example of this is when we have to determine the size of a concrete slab for an apartment building. In the design work the slab is divided into elements. This is done directly in IMPACT where one defines the different parameters and gets a result that indicates the slab's characteristics and confirmation that the strength is satisfactory.

- We can do it manually. But with the help of the program the job is simpler and quicker.

Should Heine and his colleagues need to change the size of the slab it is easy to alter a value in the program and get a new answer. In this way the design becomes intuitive and it helps them work more efficiently.

The program also gives an overview of the project stages and the control of the process when there is a large number of concrete elements, for example, when double skin walls and sandwich walls are to be made. They also get indication of their status together with an understanding of how the project stands on the timescale and when the drawings have to be finished.

## The 3D Model in client meetings

Today, communication with the factory happens manually and the drawings are printed out. But they plan to go over to a digital stream between planning and design and

fabrication of the elements. The work flow will then be automated which Heine reckons will give several advantages.

- The drawings are plotted on the form table in the factory and not by us in the office. We can then eliminate sources of error, for example, shape problems and measurement mistakes. It also saves time. But the advantages of the new techniques apply not only within the company. The 3D function in IMPACT plays a particular role in customer relations.
- We often begin with a 3D model so that the client gets an overview of what the project looks like. This is done in order to discuss different options and ideas even before we get the order of the project from the client.

The model is used as a simple way to illustrate a concept and is therefore not very detailed or precisely dimensioned. The data in 3D can be used in lots of ways.

- For us, IMPACT is a production tool but as the program is AutoCad based, we can also use the model's information in other ways.

With the help of these new techniques and new ways of working with the planning and design, Buskerud Betongvarefabrikk achieve a simple and better streaming of construction data. In the long run this will even extend out to the factory. At the same time this means that one can work more efficiently and master the tough demands of short lead times which beset the Norwegian building industry.