



## CASE STUDY TITLE

Moelven Limtre Sets World Record with Help of Standards

### SUMMARY

Standards made it possible to construct the world's highest timber building, Mjøstårnet, in just under four years. Moelven Limtre's strategic use of standards helped to reduce the construction time and halve the engineering design costs for the project.

### BACKGROUND

#### More Efficient Construction Process

Moelven Limtre AS has contributed to standardization work since the early 1970s and is responsible for iconic buildings such as the Viking Ship Olympic Arena and Oslo Airport.

The standards that were used for these buildings were the forerunners to Eurocode 5, on which the construction of Mjøstårnet is based. Eurocode 5 is the standard for the design of timber constructions. The standard covers areas such as how to dimension timber constructions and exploit the strength and natural curvature of the wood.

The technical regulation references the standards in the various Eurocodes with regard to construction safety. All large buildings in Norway must be certified by a third party before they can be occupied.

'It would have been an almost impossible job to have Mjøstårnet certified in such a short time if the documentation hadn't been based on Eurocode 5. The standards make the construction process more efficient. So, it's a question of standardizing as much as possible,' explains Moelven Limtre CEO Rune Abrahamsen.

### AT A GLANCE

#### COUNTRY

- Norway

#### LEVEL

- National

#### SDG ADDRESSED

- SDG 11 - Sustainable Cities and Communities

### STRATEGY

Moelven Limtre sits on committees that are involved in revising existing standards and designing new ones.

'It's important for us to contribute to these processes, as this gives us the opportunity to influence the standards. We also learn a great deal and get to meet people who are experts in their areas, but who can also learn from us. By all showing our cards we get an expanded competence base,' explains Abrahamsen.





## RESULTS & IMPACT

From the first drawing to Mjøstårnet being ready for occupation took barely four years. The timber building is the world's highest, at 85.4 metres and 18 stories.

'I think it would have taken an extra year if we hadn't used standards, and the engineering design costs would have been twice as high,' explains Abrahamsen.

## CHALLENGES & LESSONS LEARNED

### Profitable and Sustainable in the Long Run

Abrahamsen explains that the company's main argument for working with standards is that it pays off in the long term and contributes to a more sustainable Norway. 'The fact that there are standards that make it easier to describe, design and select timber is encouraging more people to build timber constructions. We believe that using timber in construction projects is sustainable and that it is important to have good standards that make the process easier,' he explains.

## POTENTIAL FOR REPLICATION

Eurocode 5, EN 1995 series of standards on design of timber structures, are available through the national standards body. Organizations are free to adopt and implement standards, with a small fee to access the standard.

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