

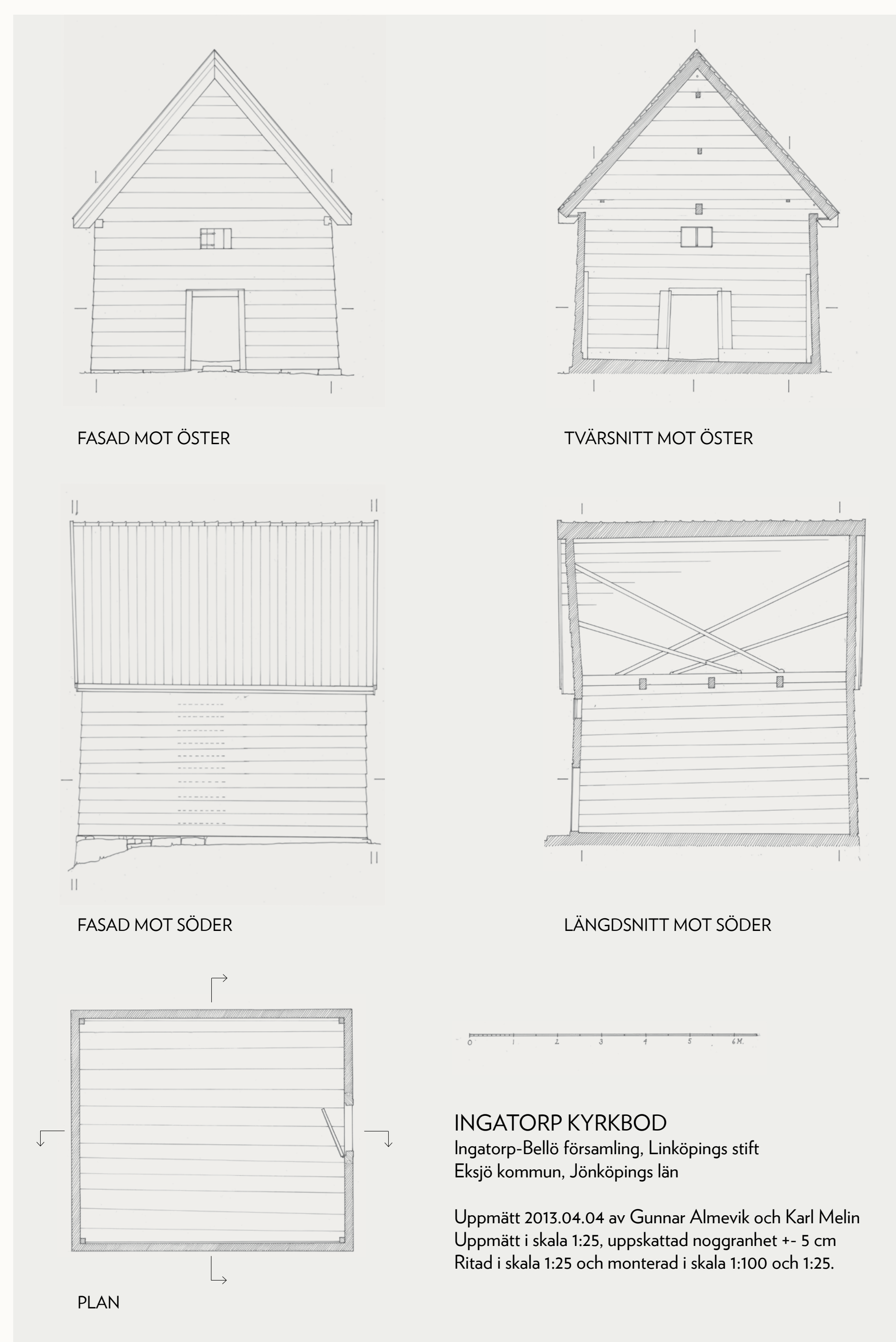
INGATORP

A CORNER TIMBERED TITHE BARN FROM THE 13TH CENTURY

Ingatorp church, in the province of Småland in the south of Sweden, is recognized as a high standard art deco church. In the outskirts of the churchyard stands a corner timbered shed that has been dated by dendrochronological analysis and C-14 to between 1219 and 1239. This shed is one of the oldest wooden buildings in Sweden. This poster presents the discovering of a medieval religious building tradition in wood.



Ingatorp tithe barn. Ingatorp belongs to the Diocese of Linköping, located in the province of Småland and reads the administrative region of Jönköping and the Municipality of Eksjö.



Characteristics in architecture and craftsmanship

As this building is one of very few existing medieval log timber buildings, and eventually the only tithe barn, it is difficult to generalize about a historic architecture and craftsmanship. Although we can point out some core feature.

1. An architectural form with manipulated perspectives

The measures of the tithe barn are "church-like" with a high and compact building with a steep pitched roof. The ground plan is almost square. Standing in front of the building gives a tall and fortified impression. This is also enhanced by manipulation, as the walls are leaned inwards about 10 cm from the sill to the eave. The gables are in reverse leaned outwards from the eave to the rooftop to magnify the impression. The frame to the reinforced entrance door also leans inwards, making it about 10 cm wider to the ground. The craft performance to achieve this architectural image is very calculated.



2. The traces of organization and constructive properties of a tithe barn

The evidence for the function as tithe barn is given by traces in the building as source of knowledge. In interstices and damages in the logs we find traces of grain shells. The inner walls have been painted with a calcium-based paint, probably to protect the construction and subsequently the grain from pests. The logs have been used as tablet, with engraved lines probably to count the taxes in kind. There are traces of interior partitions walls parallel to the corner timbered construction. The thick wooden door is reinforced with iron and the interior hinges are strong and the iron fitting is wrought all around, to make it a safe treasury.

3. The extensive cutting of logs to form rectangular logs and plane walls

Ingatorp and the medieval corner timbered churches are bound together in a building tradition using an extensive cutting of the logs. The timber is boxed with sharp corners, and when fitted together they make plane wall surfaces. In Ingatorp dovetail joints were used in the corners. This is also different from the known medieval profane building craft, using overhanging logs in the corner joints.



A peculiar longitude consolidating roof construction. Ingatorp combines timbered gables with roof trusses standing on tie beams. The trusses do not have struts or collarbeams which tells us the construction was made for light wooden shingles. On the tie beams rests a longitudinal timber, called *styrbjälke* in Swedish. At a first glimpse this 'styrbjälke' seems to support the gables but it is not connected to these at all. Instead it works as a support for four crossed raking struts that are nailed to the styrbjälke and recessed and fastened into the gables.



Counting marks on the wall (left above) **Interior** (right above) The floor tiles are cleaved and planed with axe. The inner walls was at some time painted white. **The timbered walls** (left below) The logs are boxed with sharp corners giving a plane wall. As they are not doweled the logs have shifted out. **Traces of numbering** (right below). The eighth log was numbered seemingly during the work process.



Medieval timbered buildings in Sweden

Today ten log timbered medieval churches is extant, located in a concentrated geographical territory in the south of Sweden. In addition 93 vernacular medieval buildings are registered, whereof 60 are located in the region of Dalarna. Only seven profane buildings are dated to the 13th century. The oldest still standing wooden building in Sweden is the corner timbered church Granhult (see picture above) dated to 1217. By accessible information this might be the oldest still-standing corner timbered church existing in Europe and eventually in the whole world.



Restoration. Karl-Magnus Melin prepares a log for repair. The timber is cut in the parish forest, the trees selected to match the quality and hewed with historic axes and techniques.

Conclusions and future studies

The building survey and dendrochronological analysis shows that this building is one of the oldest known corner timbered buildings, dating possible as early as 1219. The tithe barn makes an important element in the scarce collection of medieval corner timbered buildings. We can by the building and traces get information about the architecture and organization of space in a medieval tithe barn. The obvious conclusion is that the tithe barn counted as a representative building. It was given a pregnant architecture by means of skilful craftsmanship. What is notable is also the relationship between the preserved timbered churches. The religious buildings, distinct from the profane medieval timbered houses, is characterized by the proportions, the tall constructions and steep pitched roof, the extensive plane walls without protruding timbers in the corners and use of skilfully cleaved roof boards and thick wooden shingles.

How come the religious medieval buildings in wood are so apart in architecture and craftsmanship from the contemporary profane building types? Is it a question of geography and access of forests and wood as the profane elements are found in the north of Sweden and the religious in the south? Or is it a question about a directed building program for the religious building types? Or was it a tradition developed within specialized building teams for the church as commissioner?

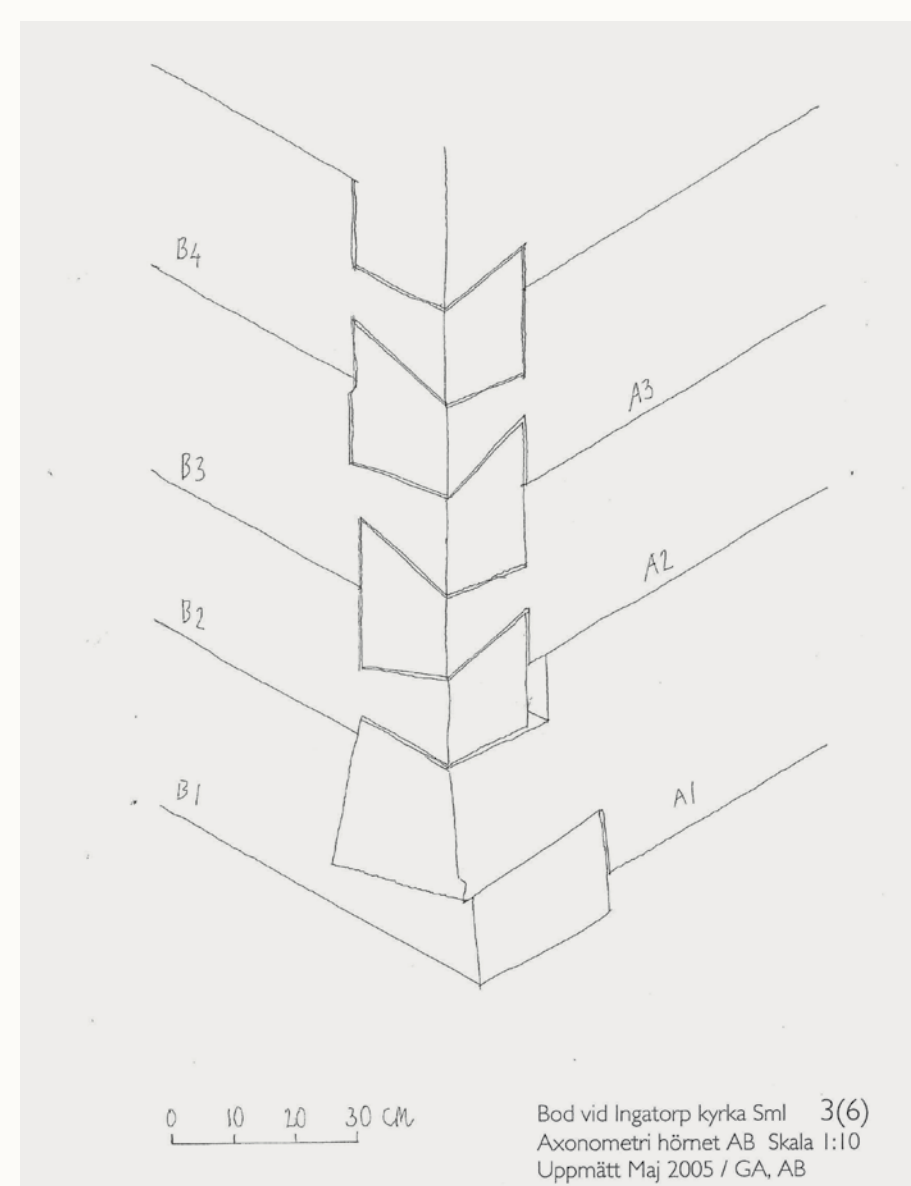
Then, how important are these few remaining religious medieval corner timbered buildings? The answer must be that they are a treasure, to compare with the 28 remaining stave churches in Norway. The Swedish medieval corner timbered buildings are among the oldest wooden buildings in the world.

THE CRAFT LABORATORY is a national centre for crafts in conservation under The University of Gothenburg. The centre is set up in close cooperation with the Swedish National Heritage Board, the Church of Sweden, the National Property Board, the Swedish Local Heritage Federation, craft enterprises and trade organisations. The centre aims to bridge the gap between academic environment and practice. The main tasks of the centre are to document, transmit on and develop weak and endangered craft skills, and to initiate craft research. www.craftlab.gu.se

GUNNAR ALMEVIK leads the Craft Laboratory at University of Gothenburg. Almevik has a PHD in Architectural Conservation, and his research concerns building history, craft skills, restoration and documentation procedures. In a running research project with National Heritage Board he examines craft practitioners documentation procedures in restoration. Contact: gunnar.almevik@conservation.gu.se, +46 (0)31 7869301

KARL-MAGNUS MELIN is a traditional carpenter and archaeologist at Knadriks Kulturbrygg AB. He is in charge of the roof construction in the full scale reconstruction of the medieval corner timbered church Södra Råda. At the restoration of Ingatorp tithe barn he is responsible for the carpenter work. From 2014 he will run a project for the Diocese of Lund called "Historic carpentry art in the churches of the Diocese of Lund". Contact: norup125@hotmail.com, +46 (0)733 425265

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Leaning walls (left and right above) The plumb expose the leaning of the timbered walls. **"Church shingle"** (left below) Originally the exterior logs were weathered and tarred. The first generation shingles has been dated by dendrochronology to 1555-1580. **Trapezoid sill** (right below) Traces of the original form of the sill with a trapezoid cross section can be recognized by the shaped ending of the longitudinal timber that was formed to merge with the gable sill.