Regular details - IN. - V2.1 - Jan. 2003

Building elements catalogue

Preliminary remarks

The details presented below have been developed as part of a simple and cost-effective construction system for industrial buildings, halls and similar objects.

Basic aspects

Statics and design

With KLH it will be possible to erect buildings from the top of foundation upwards completely in timber, this also applies to buildings with larger dimensions. Large spans can be bridged in combination with intermediate structures made of steel or wood.

The system generally goes without fixed concrete columns etc. as long as the single flat plate design of roof plane and ceiling elements is used. Foundation is much more easy than with conventional concrete halls. These advantages will lead to major savings, especially in case of poor foundation soil.

Buildings can be stiffened using the roof flat plate halls with a length of up to 100 m were already realized.

For industrial buildings, only thin KLH solid timber plates with a thickness of up to approx. 120 mm are economic (except that a higher fire protection than F30 is required). If this plate thickness is not sufficient, intermediate structures made of laminated board wood will be used or, for instance, trussing of roof elements carried out.

Building physics

A wall structure which is open to vapour diffusion is most useful - also for industrial buildings. With an insulating plane of approx. 8 cm of rock wool an U value of ca. 0.33 W/m²K can be reached. The KLH solid timber plate alone will give an U value of ca. 1 W/m²K. This value will be sufficient in many cases. In some buildings people already refrained from insulating the wall and only insulated the roof as most of the heat is lost through the roof area.

Sound

In most cases there are no high sound protection requirements for industrial buildings. Nevertheless, if required, any sound value (up to approx. 60 dB) will be reached with simple superstructures. Practicable solutions are also available for sound absorption in the interior.

Facade

Facade design offers many variants. A metal facade is the most cost-effective solution. Timber facades are generally expensive. Plastered facades are not frequently used for halls, but they are possible.

Roof

In most cases, the roof is designed as an externally insulated roof with foil cover. This is an economic solution for large roof areas with a generally low falling gradient. Under suitable boundary conditions, metal roof covering is also possible but requires a ventilation plane. Roof windows and similar elements can be easily integrated in all variants.

Inner surfaces

In most cases, KLH solid timber plates are left untreated (industrial surface quality). The whole installation is mounted on the plate as a pre-wall installation and/or suspended from the ceiling.

Extension/reconstruction

Industrial buildings are mostly subject to major alterations. Such alterations can be easily carried out. It is possible to simply cut out whole wall elements, openings etc. (however, in case of major alterations the statics have to be checked). Bearable surfaces where cables or similar elements can be attached to or suspended from, are available almost everywhere. Intermediate structures are needed only sometimes.

Regular details - IN. - V2.1 - Jan. 2003

Building elements catalogue

Detail Survey

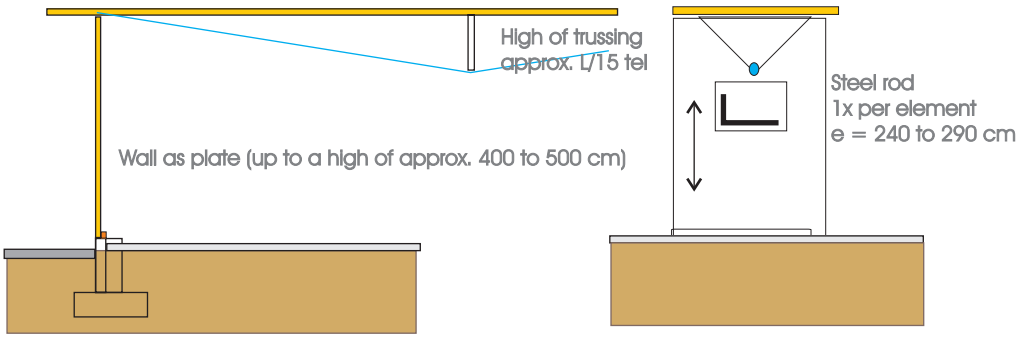
Design Details

Regular details - IN. - V2.1 - Jan. 2003

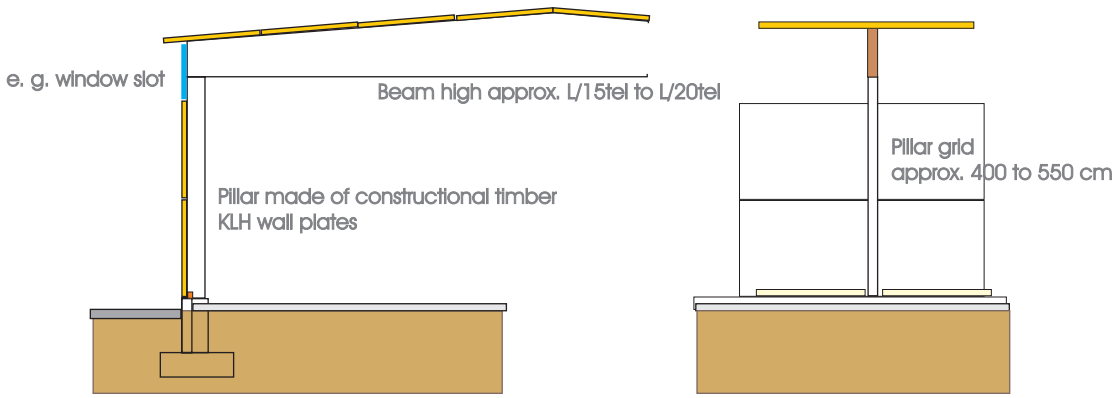
Building elements catalogue

Survey - hall & industrial buildings

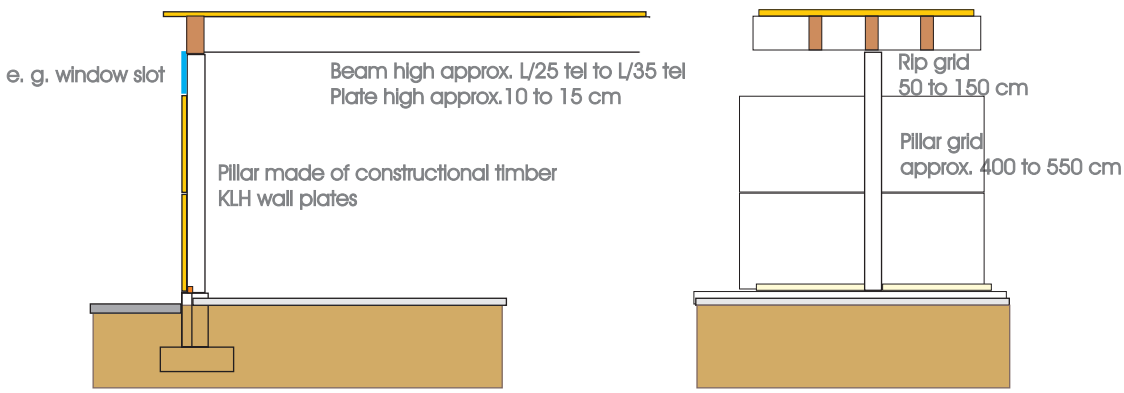
Trussed plate - straight or slightly curved



Skeleton structure with constructional timber - plain roof, saddle roof or lean-to roof



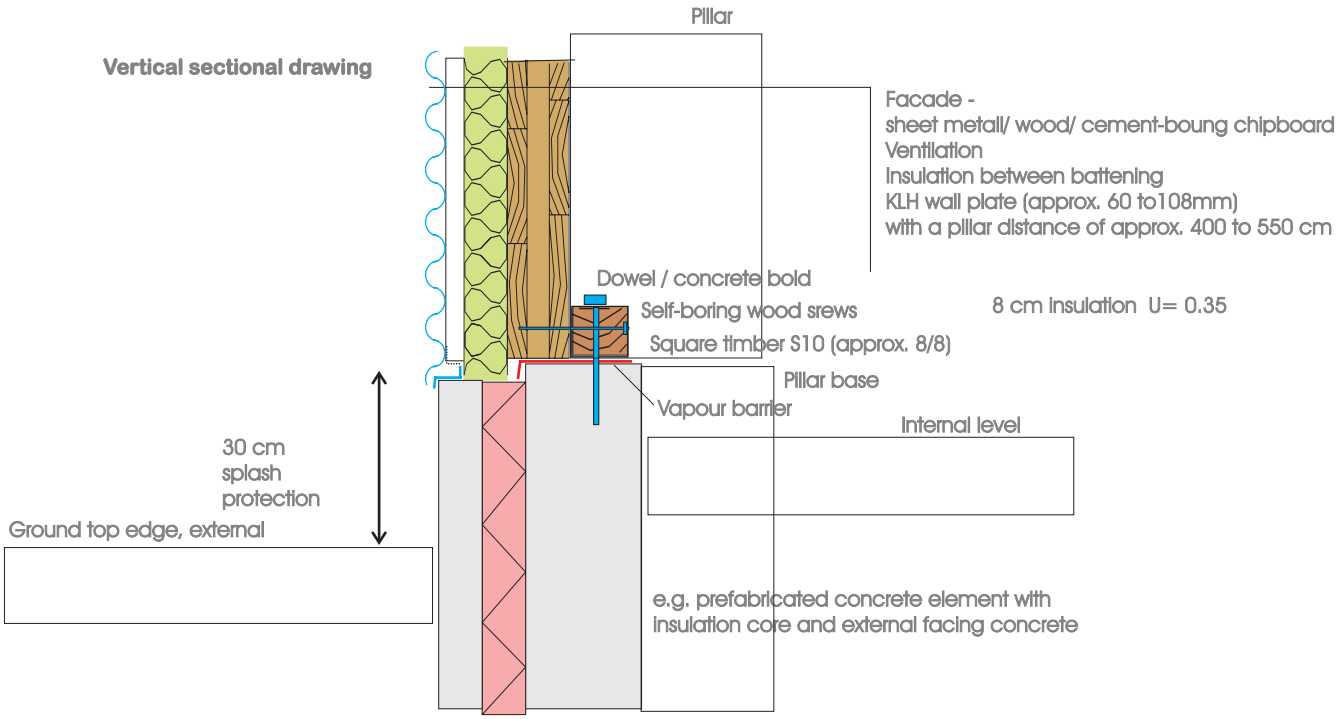
Ribbed plate element for plain roofs or lean-to roofs

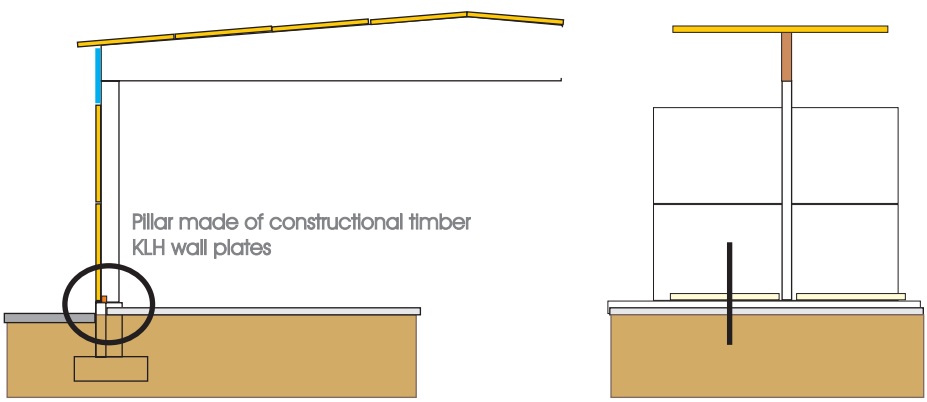


Some of these superstructure elements are proprietary elements - please inform yourself about possible licende fees

Building elements catalogue

IN. 2.1.1
BASE POINT

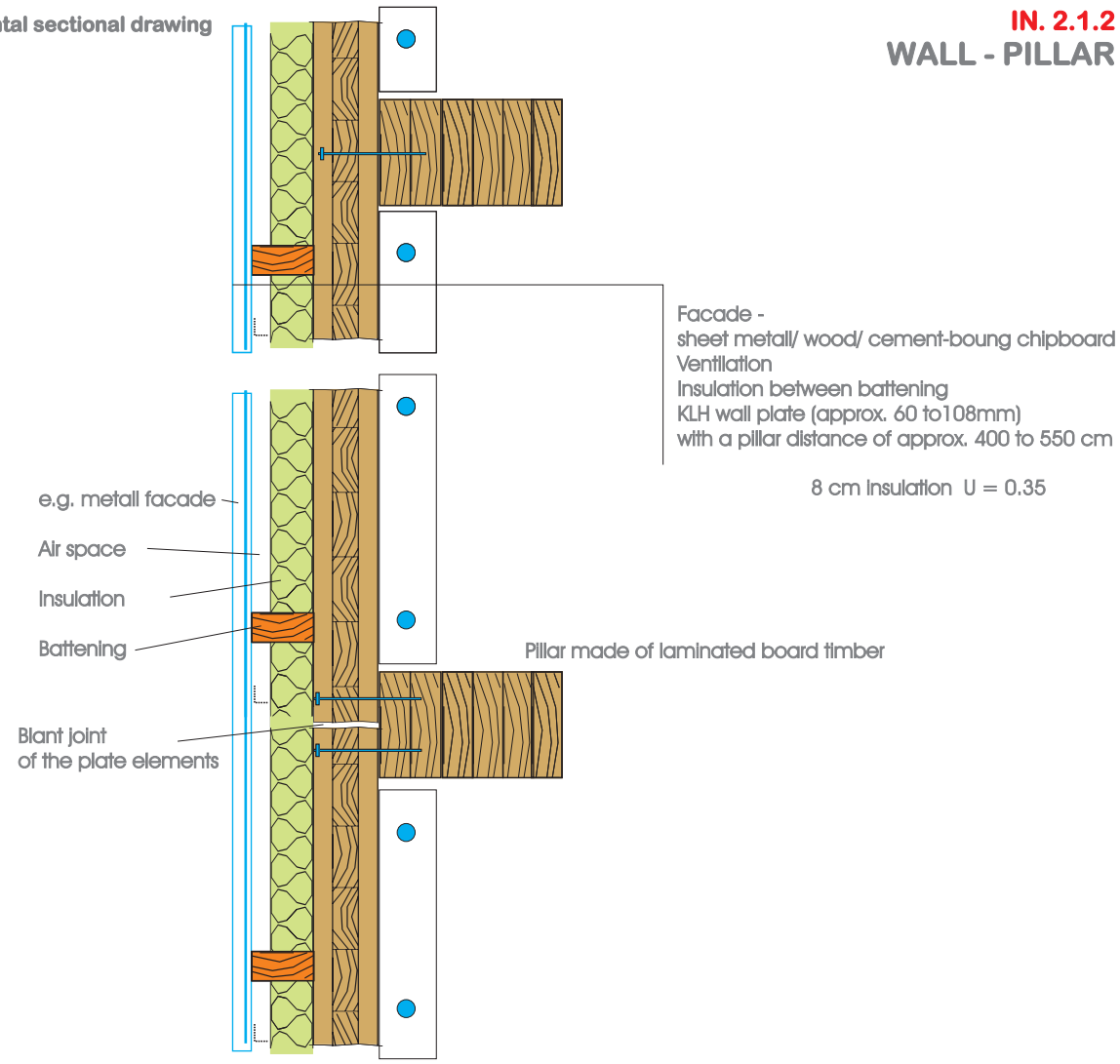


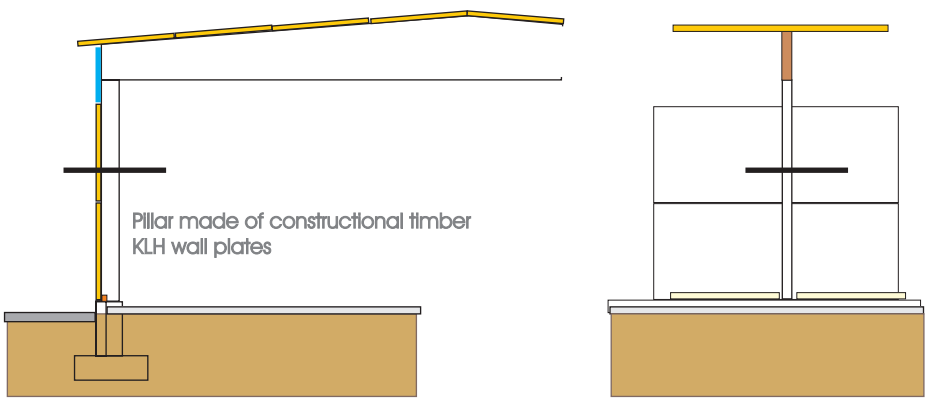


Building elements catalogue

Horizontal sectional drawing

IN. 2.1.2
WALL - PILLAR

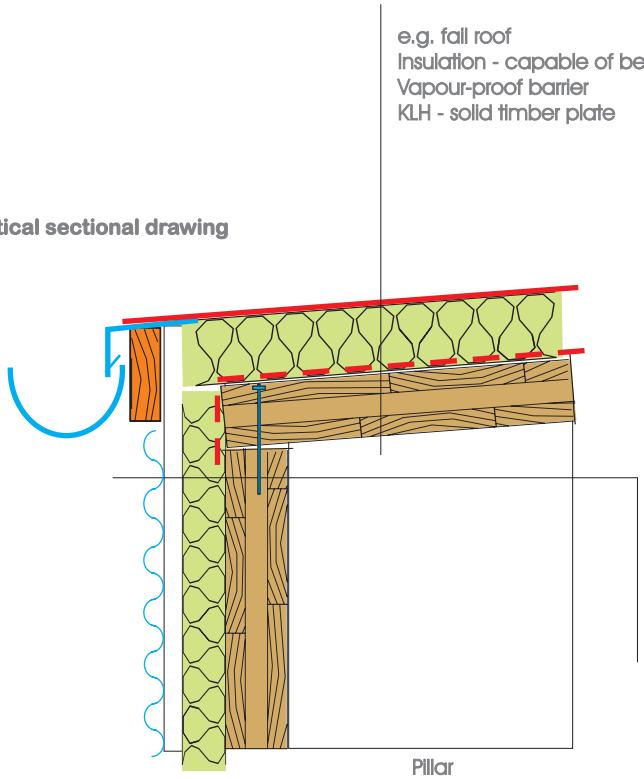


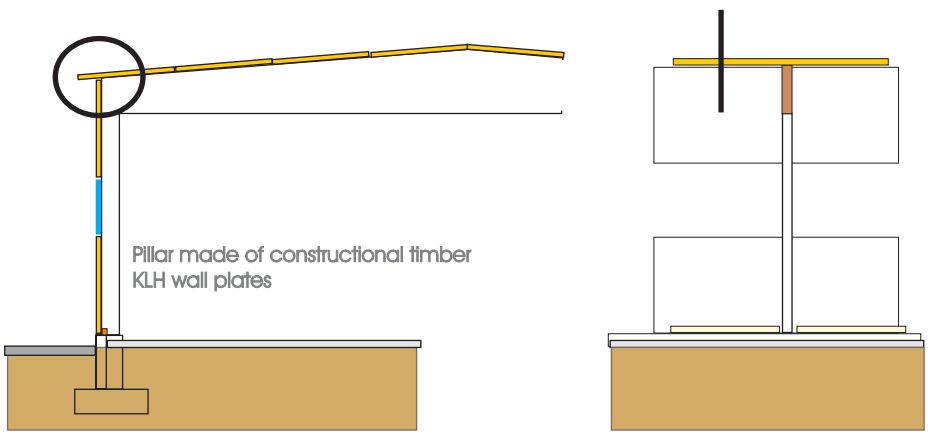


Building elements catalogue

IN. 2.1.3
EAVES AND VERGE

Vertical sectional drawing

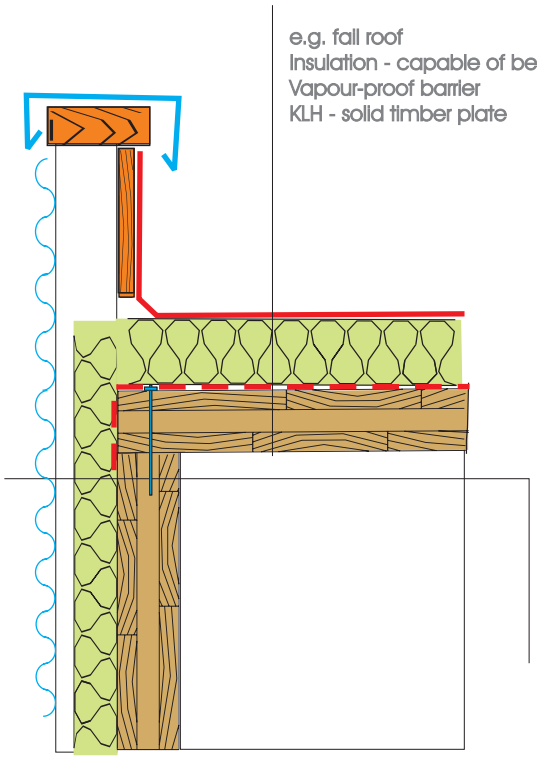




Building elements catalogue

IN. 2.1.4
ROOF PARAPET STRUCTURE

Vertical sectional drawing



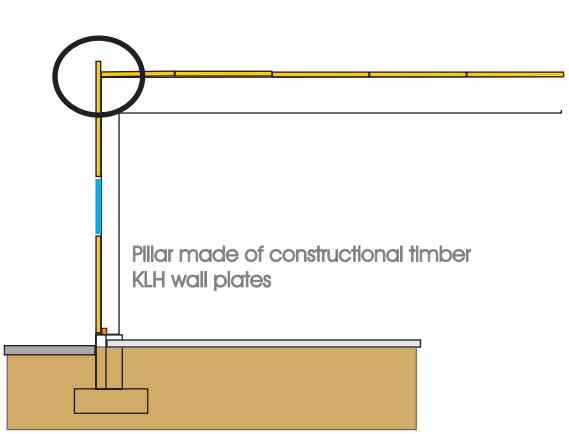
e.g. fall roof
Insulation - capable of bearing
Vapour-proof barrier
KLH - solid timber plate

12 cm insulation U = 0.25

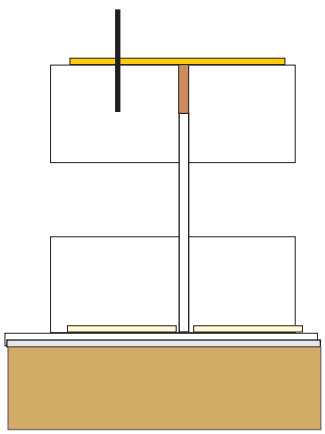
Facade -
sheet metall/ wood/ cement-boung chipboard
Ventilation
Insulation between battening
KLH wall plate (approx. 60 to108mm)
with a pillar distance of approx. 400 to 550 cm

8 cm insulation U = 0.35

Pillar



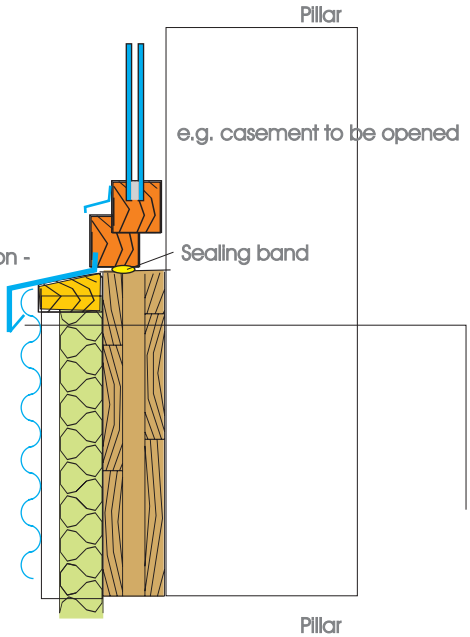
Pillar made of constructional timber
KLH wall plates



Building elements catalogue

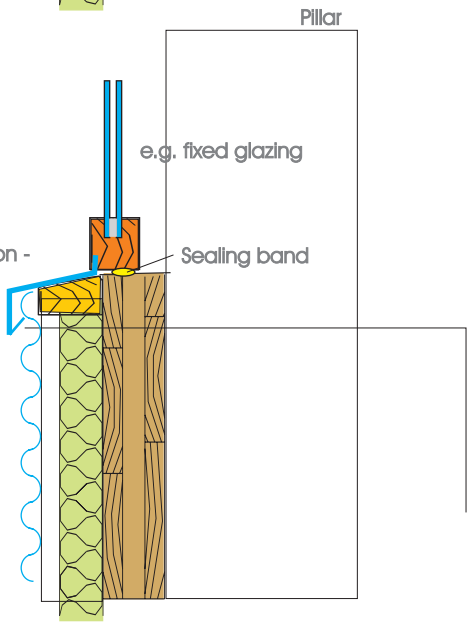
IN. 2.1.5
WINDOW INTEGRATION

Vertical sectional drawing

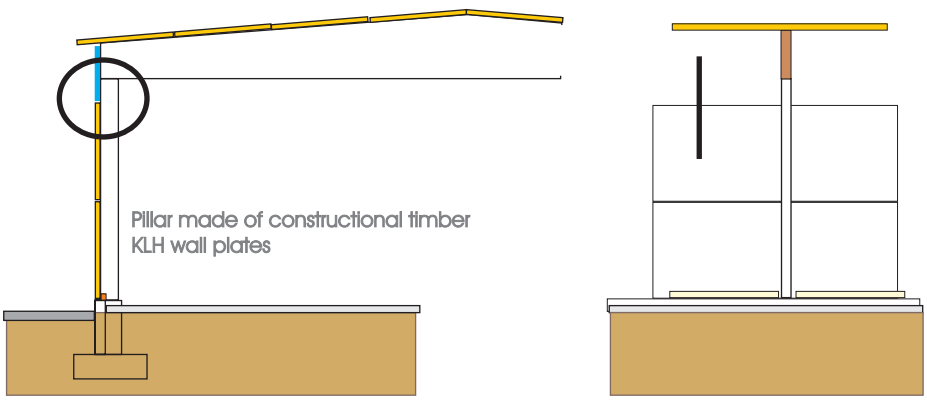


Facade -
sheet metall/ wood/ cement-boung chipboard
Ventilation
Insulation between battening
KLH wall plate (approx. 60 to108mm)
with a pillar distance of approx. 400 to 550 cm

Vertical sectional drawing



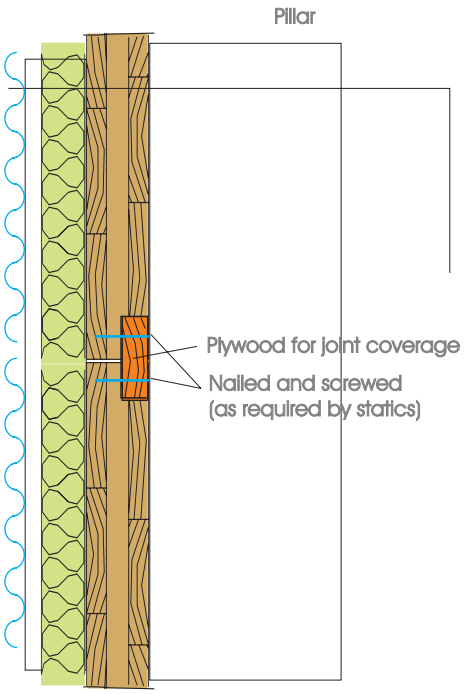
Facade -
sheet metall/ wood/ cement-boung chipboard
Ventilation
Insulation between battening
KLH wall plate (approx. 60 to108mm)
with a pillar distance of approx. 400 to 550 cm

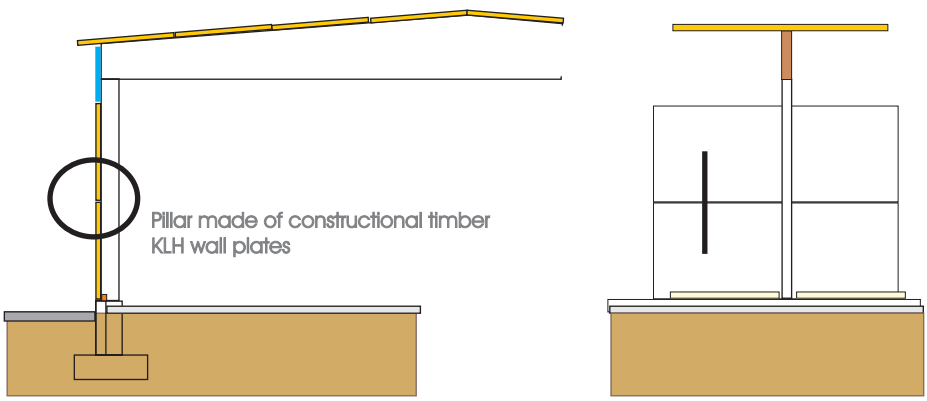


Regular details - IN. - V2.1 - Jan. 2003

Building elements catalogue

IN. 2.1.6
LONGITUDINAL WALL JOINT

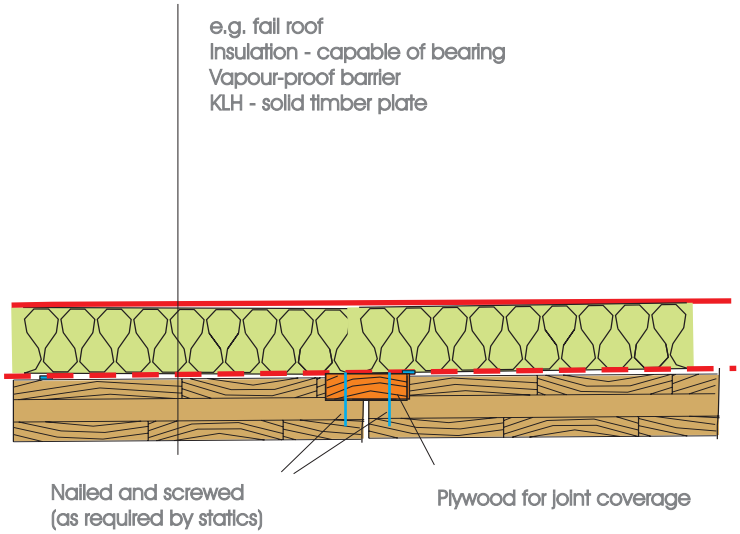




Regular details - IN. - V2.1 - Jan. 2003

Building elements catalogue

IN. 2.1.7
LONGITUDINAL CEILING POINT



Stepped lap as a variant for the joint board
- advantageous especially in case of higher loads