

Montic II

Holzbau

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Holzeigenschaften



Anisotropische Röhrenstruktur

- Abriebfestigkeit
- Belastbarkeit
- Längenänderung
- Dämmverhalten



Feuchteaufnahme

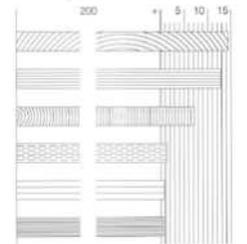
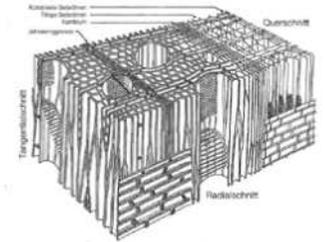
- Elastizität



Brandverhalten

Natürliche Merkmale

- Risse, Einwüchse
- Farbe, Verfärbung
- Insektenfraßanfälligkeit



Holzarten



Farbe

gelblich weiß, rötlich braun, blass rötlich, leicht violett



Struktur

ringporig, vertikal harzporig, zerstreut



Rohdichte

0,1-1,3 g/cm³

Schwindmaß

0,07-032 % pro 1% Feuchteänderung



Stehvermögen

gering (*Azobe*) -
sehr gut (*Fichte, Redcedar*)

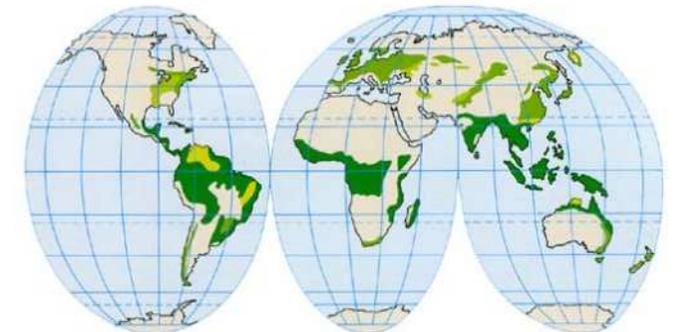
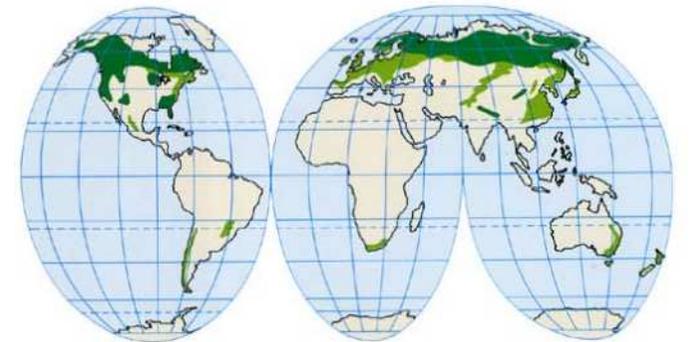
Pilzresistenz

gering (*Fichte*) -
groß (*Azobe, Redcedar*)

Insektenresistenz gering (*Fichte*)-
groß (*Azobe, Redcedar*)

Herkunft

Europa (*Fichte*)
Nordamerika (*Western Redcedar*)
Westafrika (*Azobe*)



Holzschäden

Hauptursache: Klima

Feuchte/Witterung, Temperatur, Strahlung

- Schwinden, Quellen, Krümmen, Verdrehen
- Verfärbung
- Rissbildung
- Pilzbefall (HF > 20%)

Holzart

- Insektenbefall



Holzschutz

Maßnahmen

Baulich-konstruktiv

- Hauptwetterlage?
- Vordächer, Überstände
- Kontaktvermeidung von feuchten Oberflächen
- stehendes Wasser vermeiden
- bauphysikalische Regeln befolgen

- Kontrollmöglichkeiten
- Lagerung

Materialtechnisch

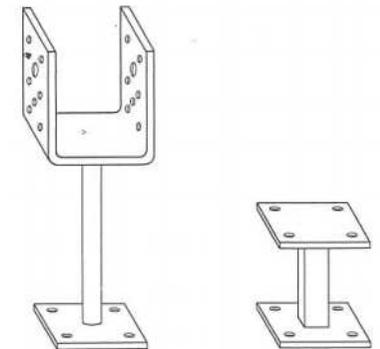
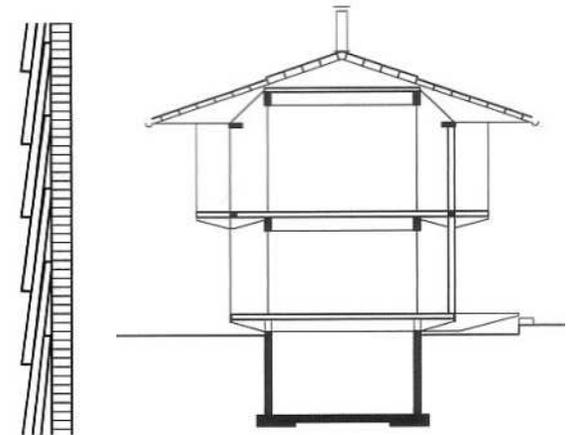
- Wahl der Holzart (Alter, Nährstoffgehalt, Resistenz)
- geeignete Holzfeuchte

Chemisch

- Imprägnierungen, Lasuren, deckende Anstriche & Druckimprägnierung (Löslichkeit, Gesundheitsrisiko, Schutzklasse)
- gegen UV-Strahlung, Feuchte, Pilze & Insekten (toxisch!)

Biologisch

- Holzteer, Holzessig, Bienenwachs, ätherische Öle



Termiten

Arten: ca. 40
Verbreitungsgebiete: Amerika, Afrika
Nahrung: Holz, Humus

Maßnahmen:

vorbeugend

- Holzteile ca. 40 cm über Erdboden halten
- Feuchte durch trockene & belüftete Lage vermeiden
- Risse & Schutzkammern versiegeln/aufbrechen
- wiederholte Kontrolle der Konstruktion & der Umgebung
- Basalt Barrikaden
- Feine Gitternetze
- Folienabdeckung

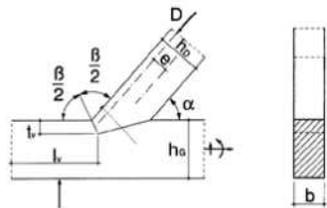
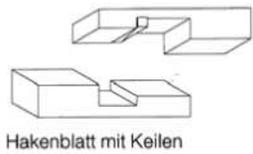
akut

- Kälte, Wärme, Gas, Giftinjektion, elektrische Impulse
- natürliche Fressfeinde
- Holz trocknen

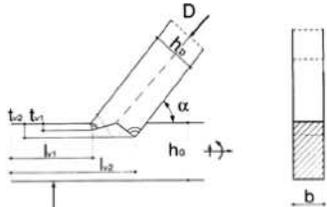


Verbindungsmitel

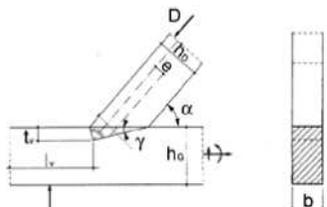
Zimmermännisch



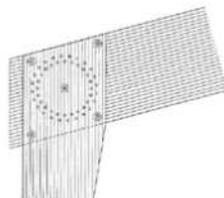
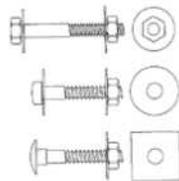
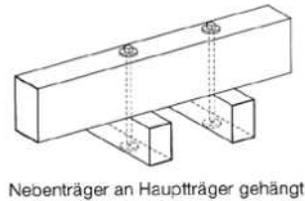
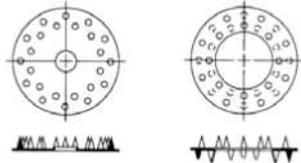
einfacher Stirnversatz



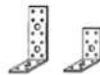
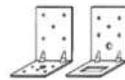
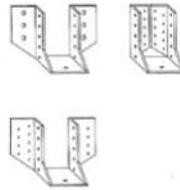
doppelter Versatz, rechtwinkliger Stirn-, Fersenversatz



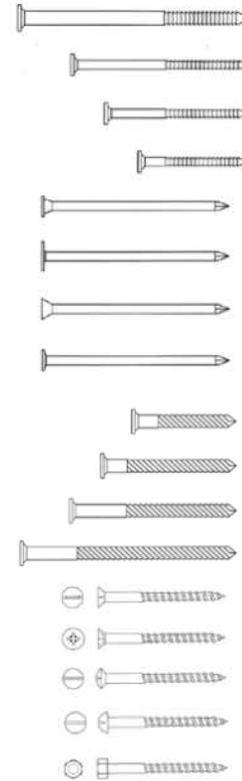
Bolzen/ Dübel



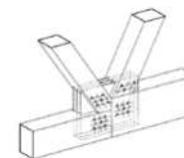
Winkel/ Balkenschuh



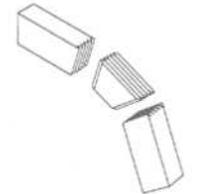
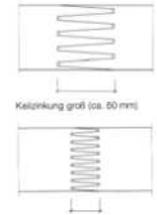
Nägel/ Schrauben



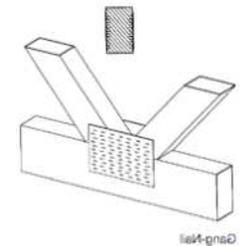
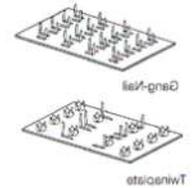
eingelegte Stahlbleche



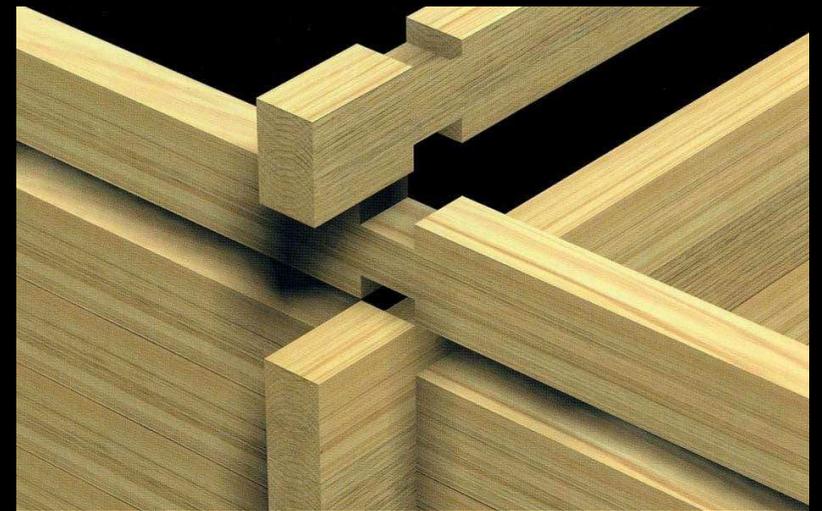
Leimen Keilverzinken



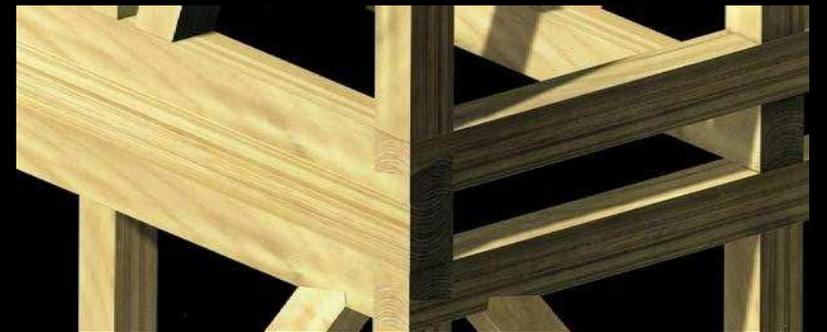
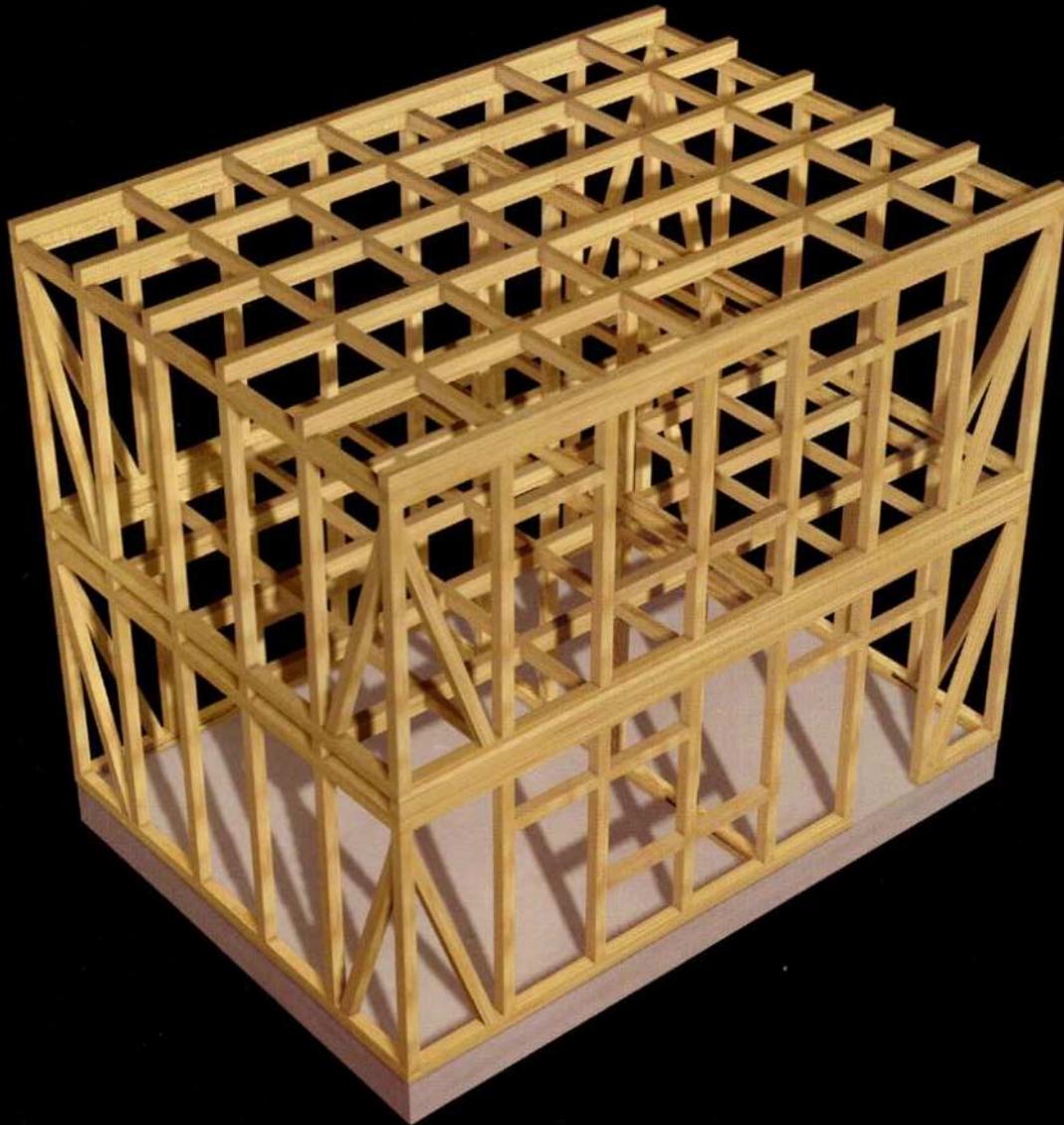
Nagelplatte



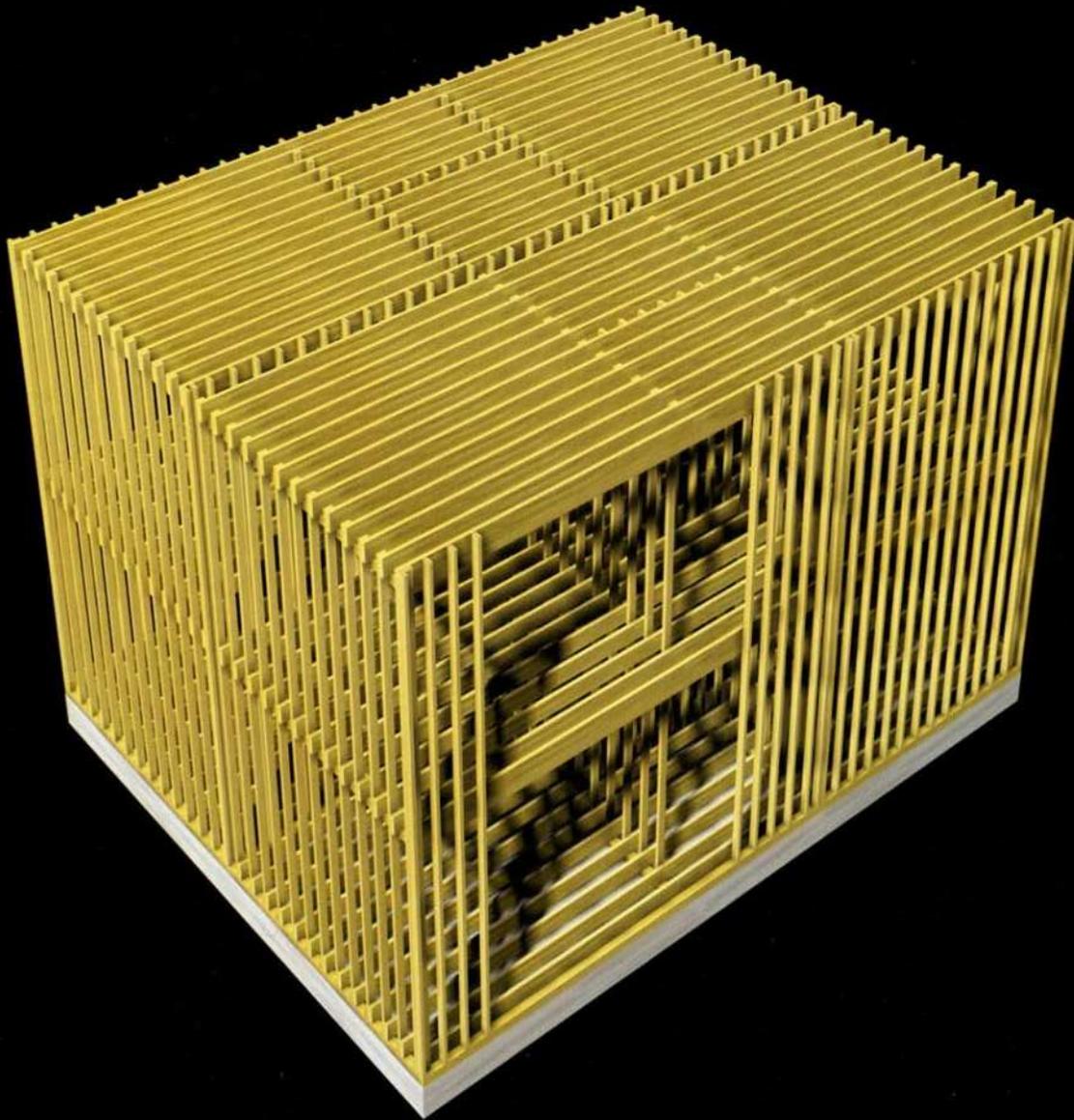
Blockbohlen



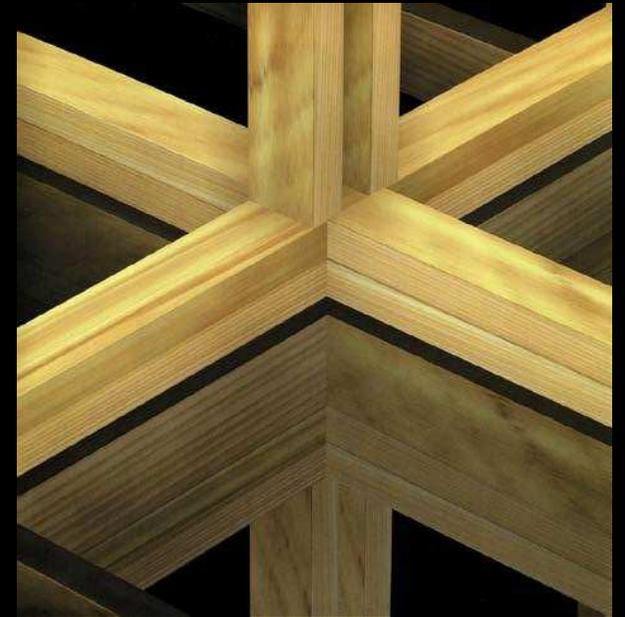
Fachwerk



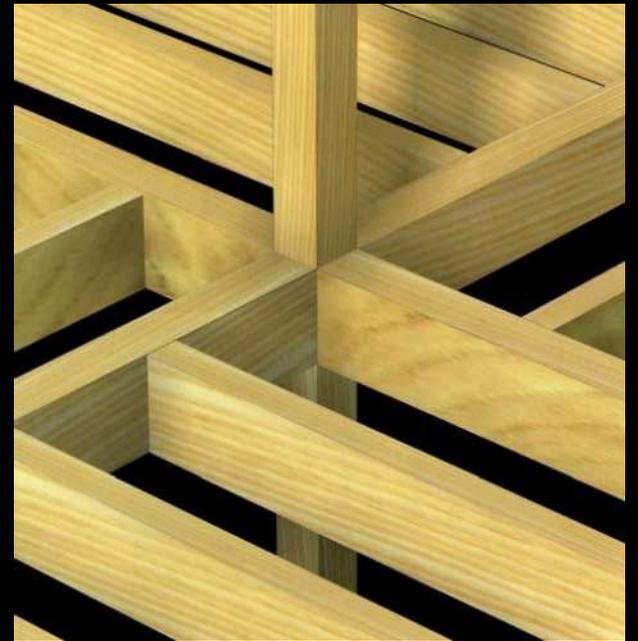
Balloon-Frame



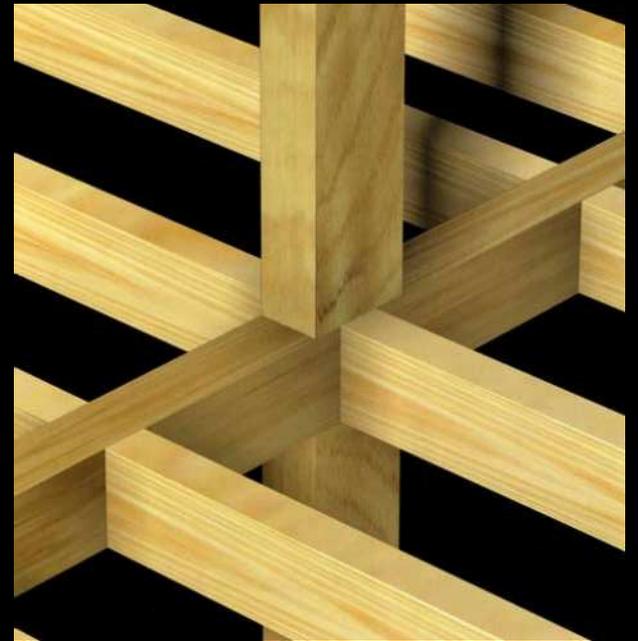
Holzrahmen



Pfosten-Riegel



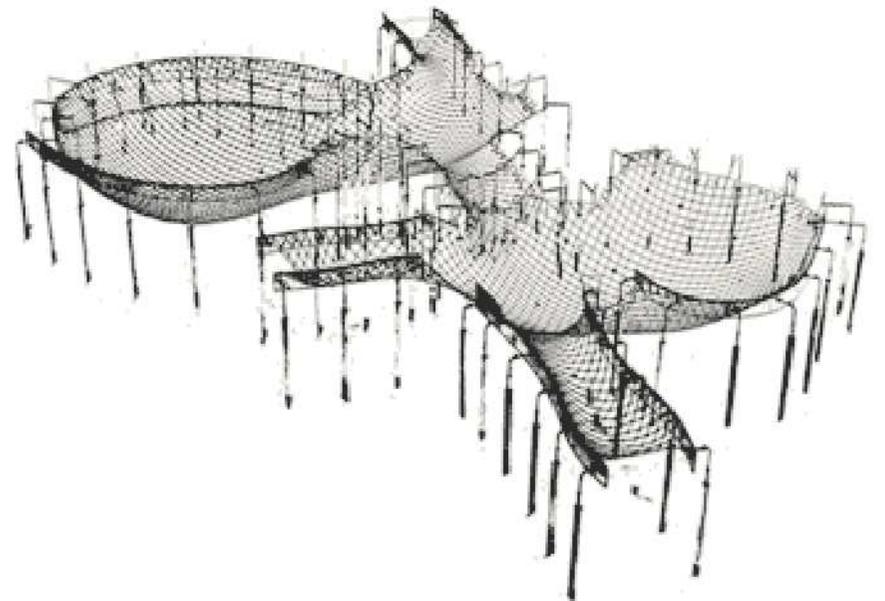
Träger auf Stütze



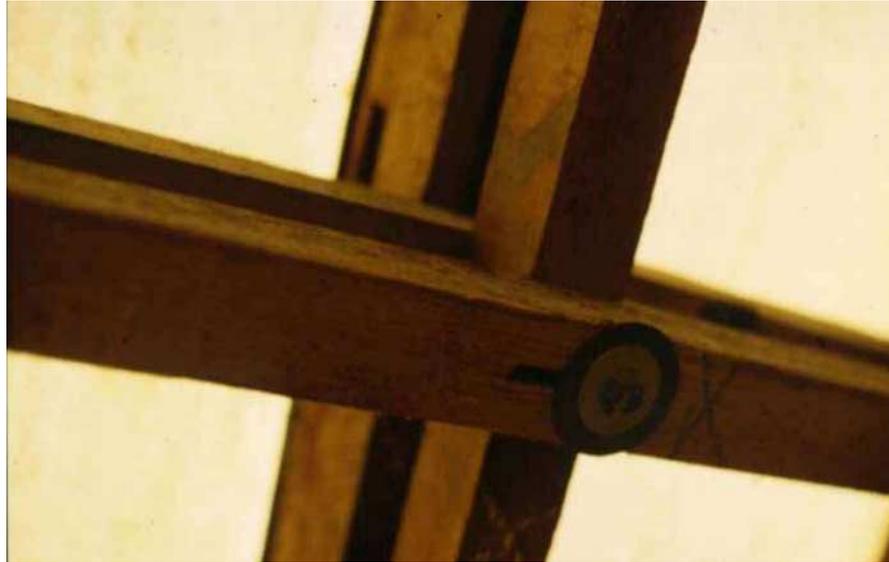
Zange



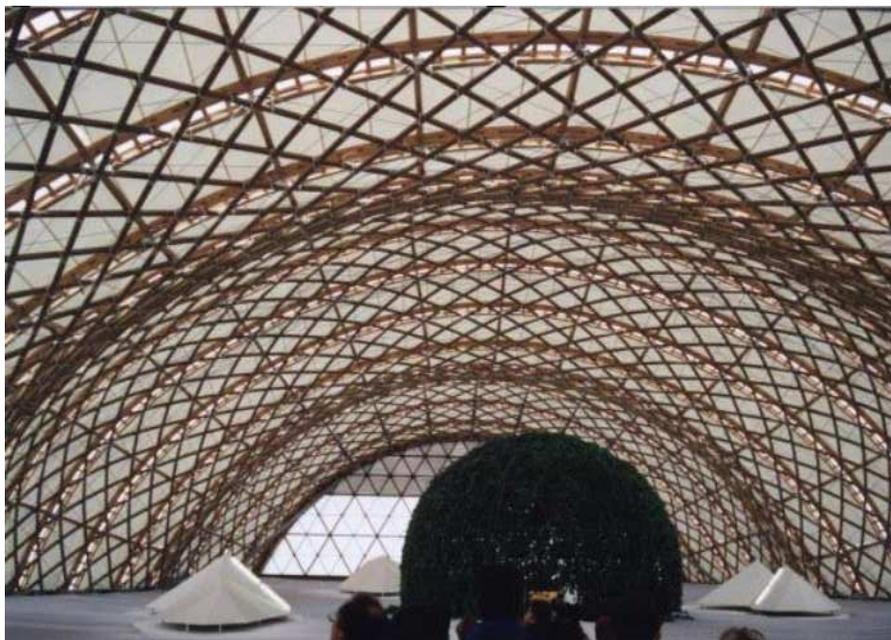
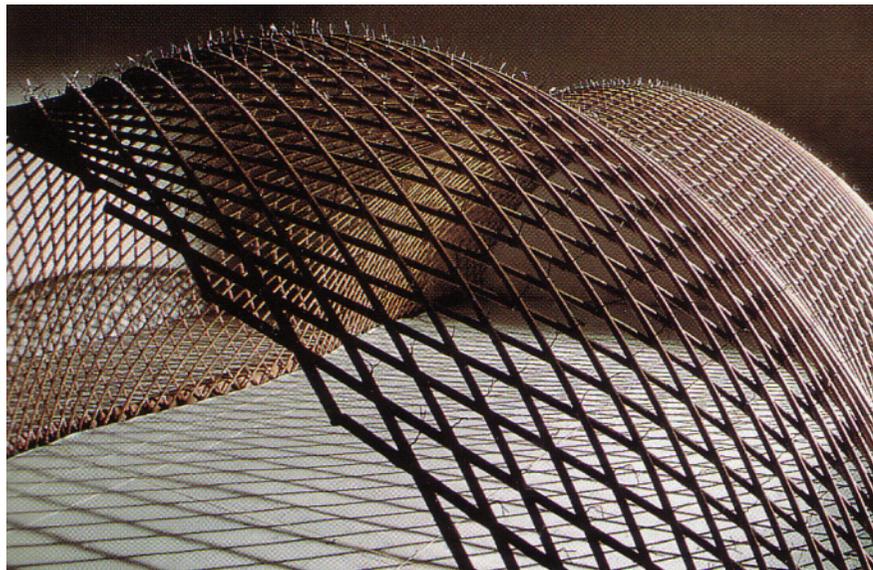
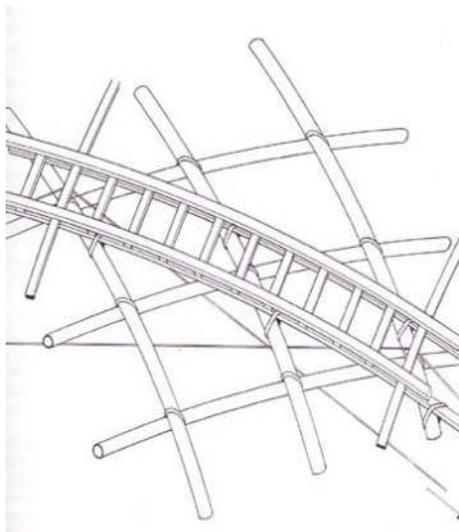
Gitterschalen

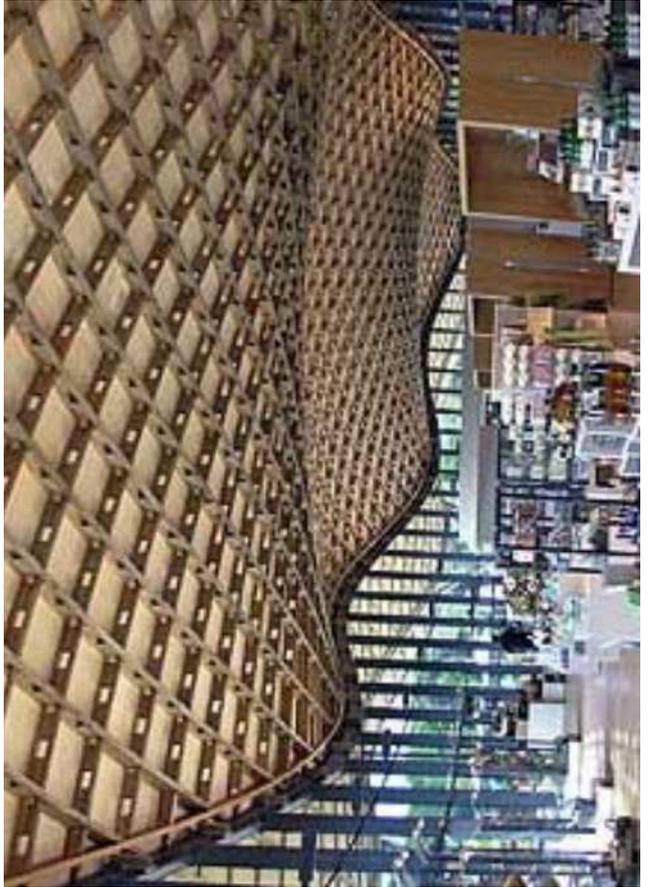


Frei Otto, Multihalle, Mannheim, 1975

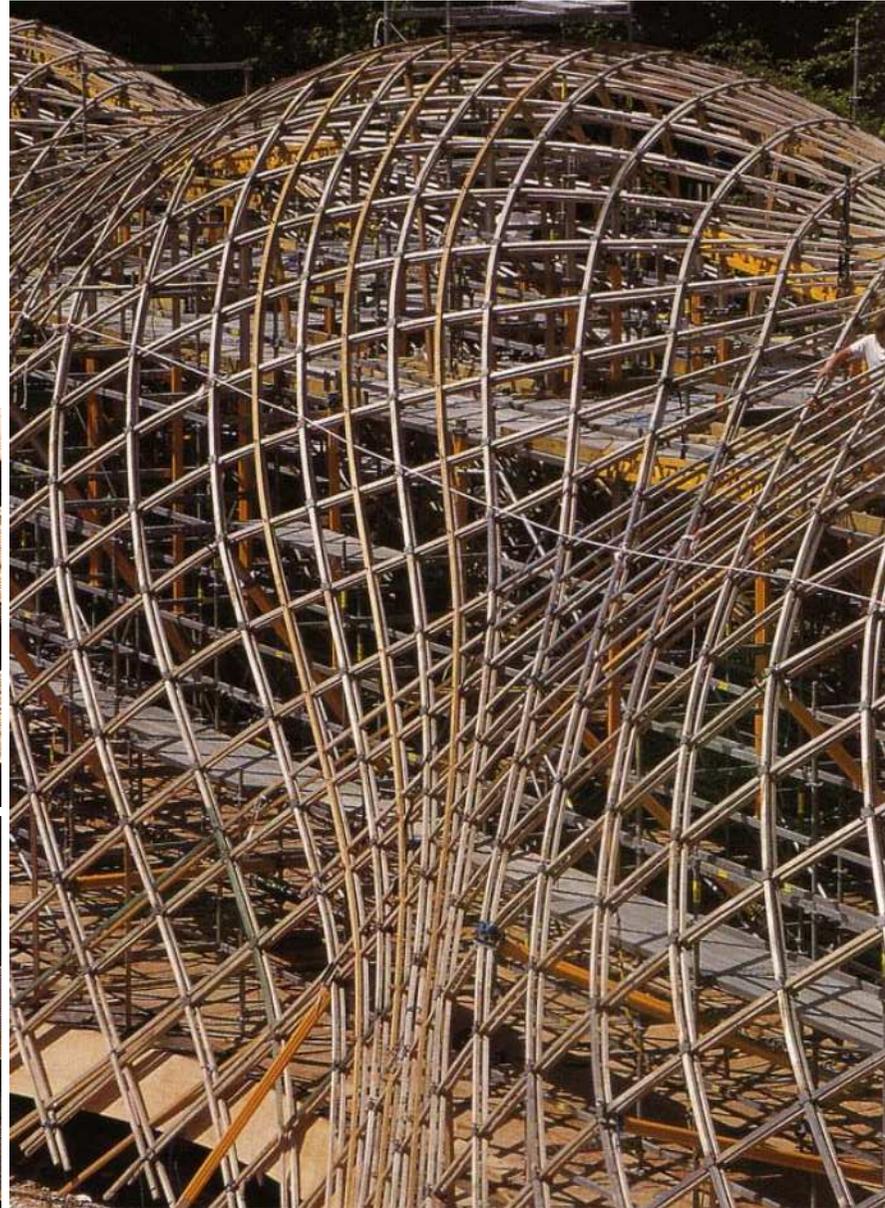
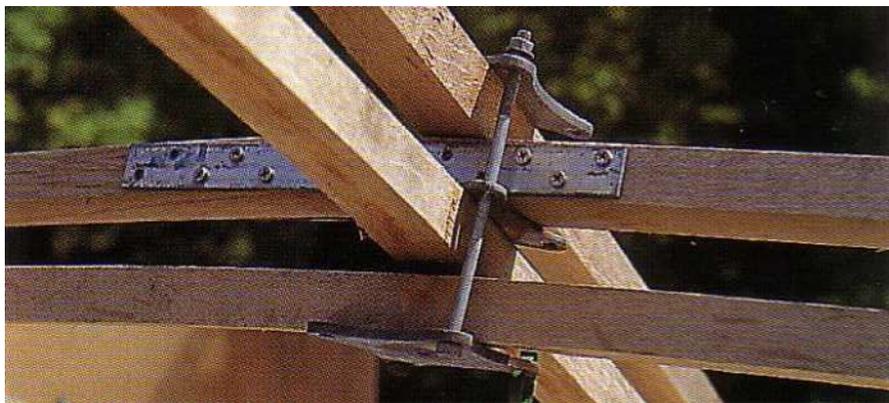
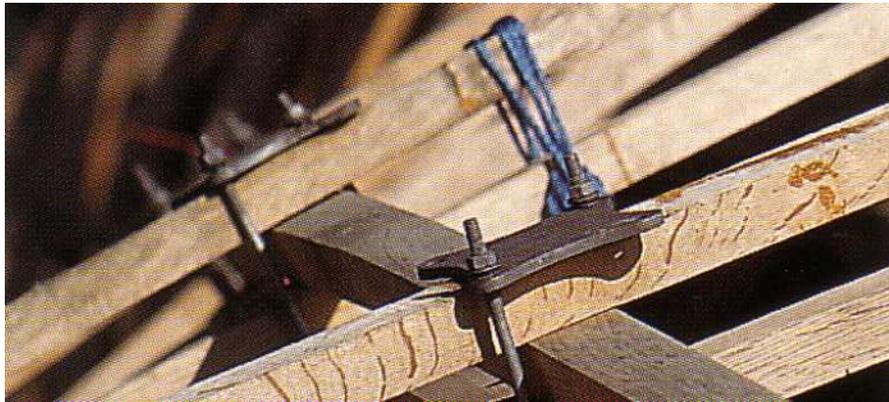
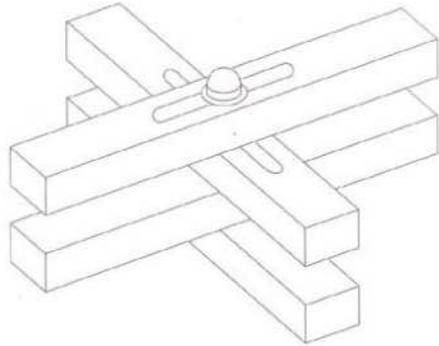


Shigeru Ban, Japanischer Pavillion, EXPO 2000

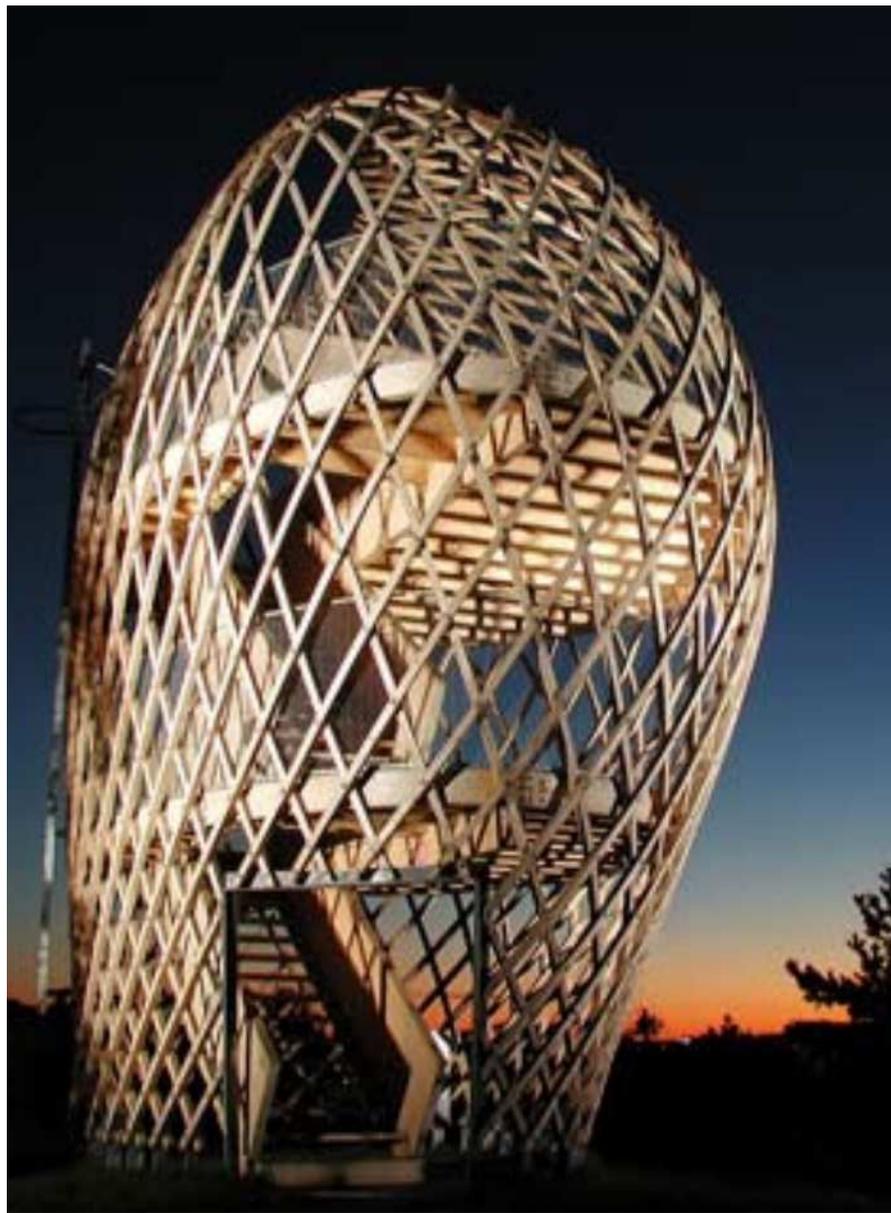




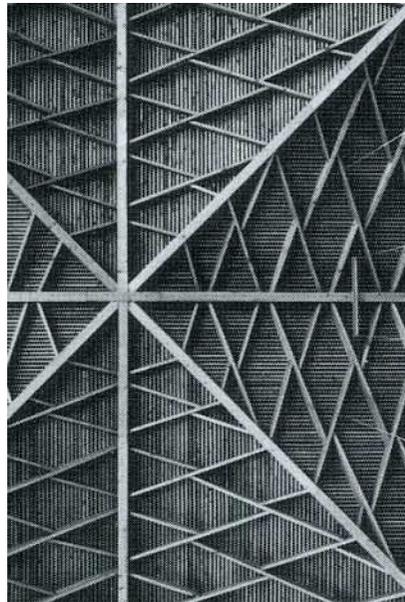
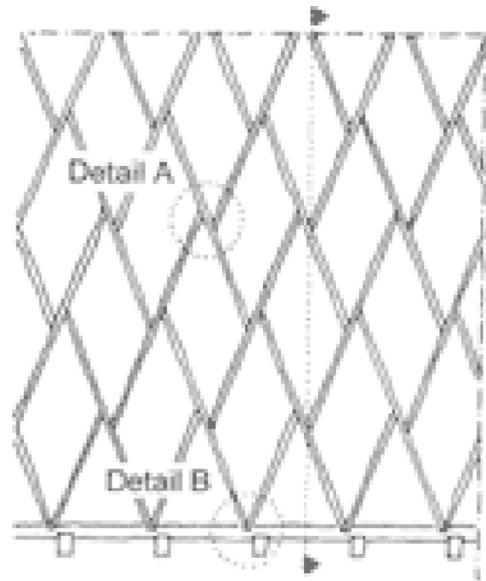
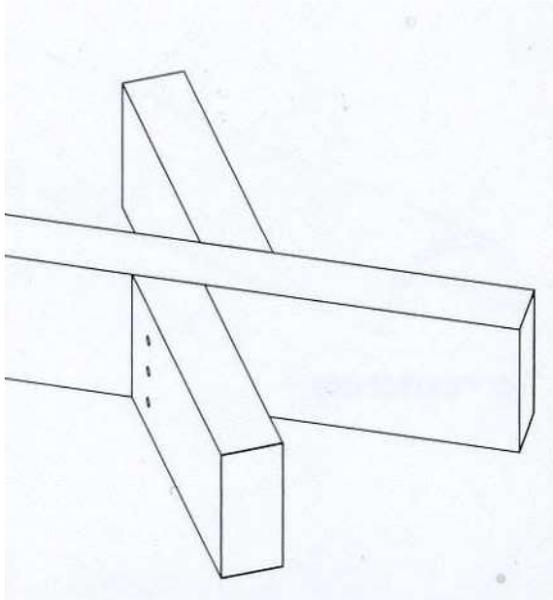
Edward Cullian, Weald & Downland Museum, Sussex, 1996-02



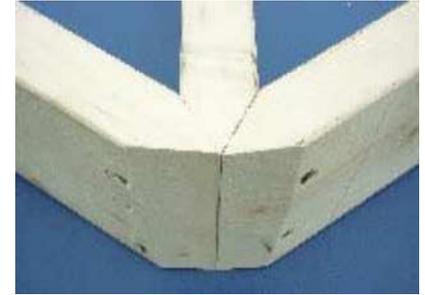
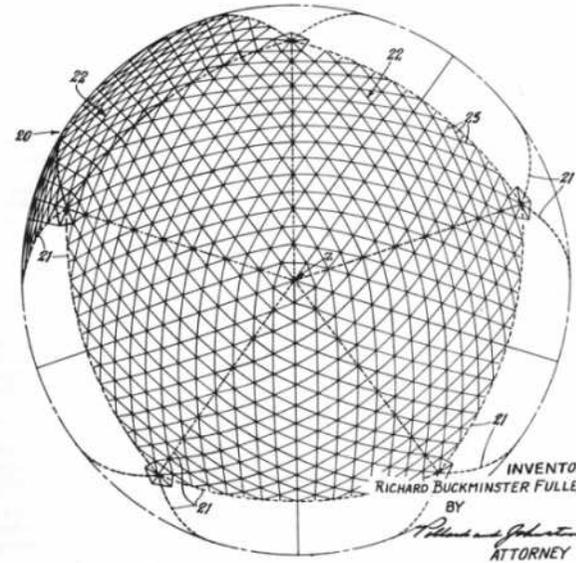
HUT Wood Studio/ Ville Hara, Korkeasaari Zoo Lockout Tower, Helsinki, 2000-02



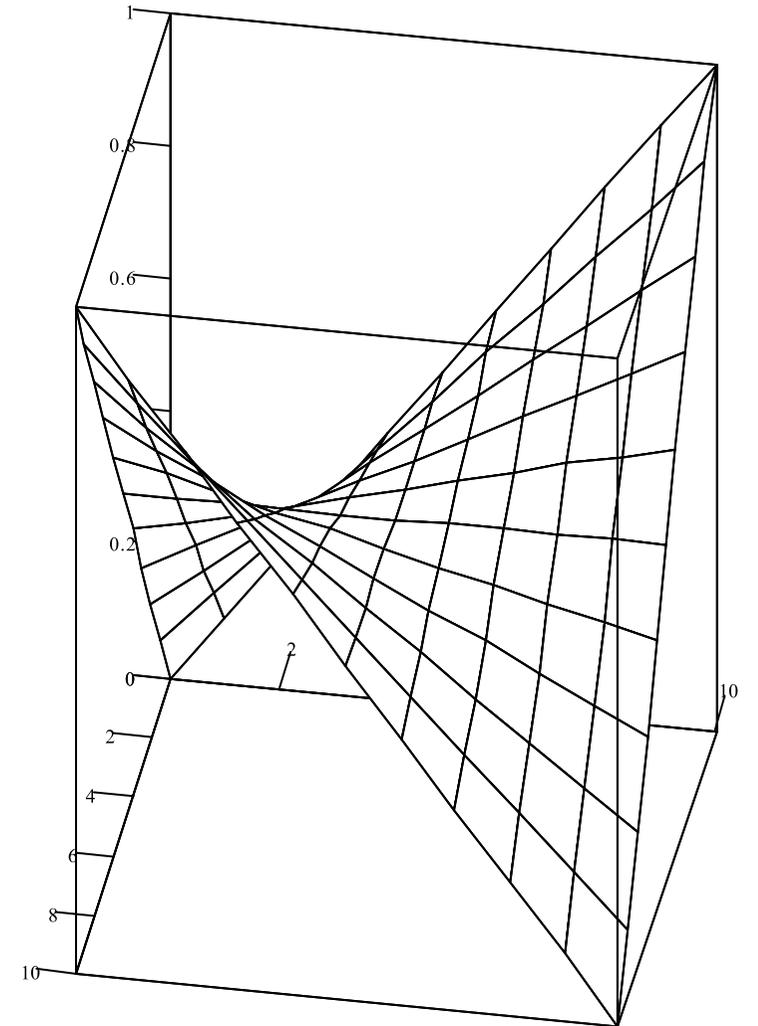
Zollinger Bauweise

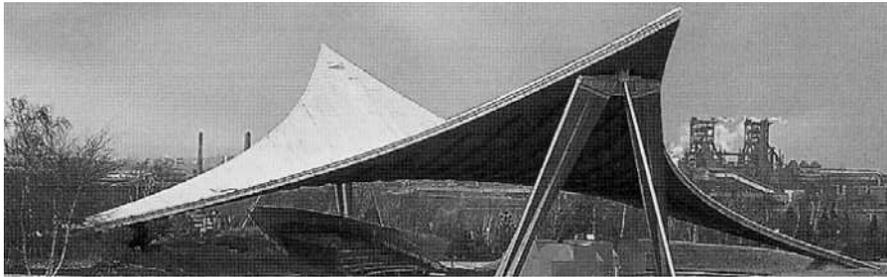
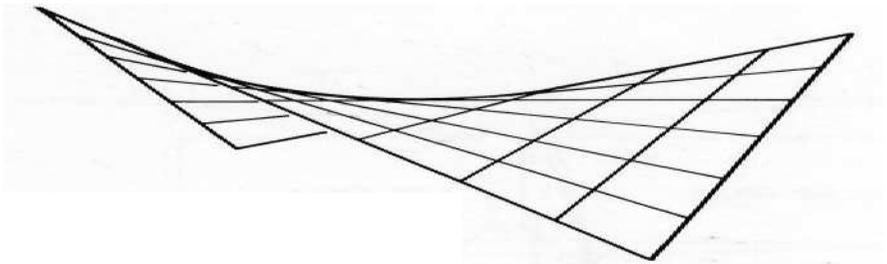


Geodätische Schalen

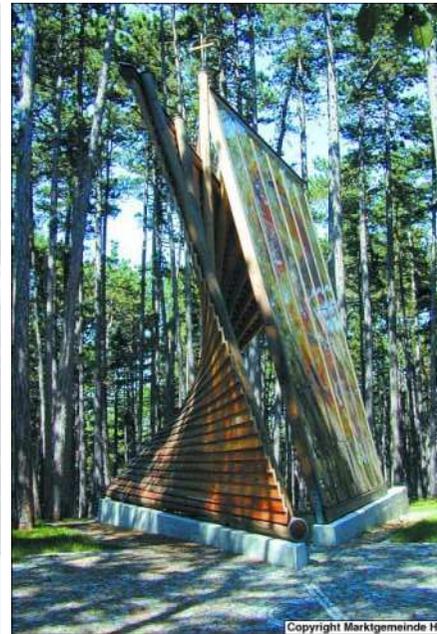
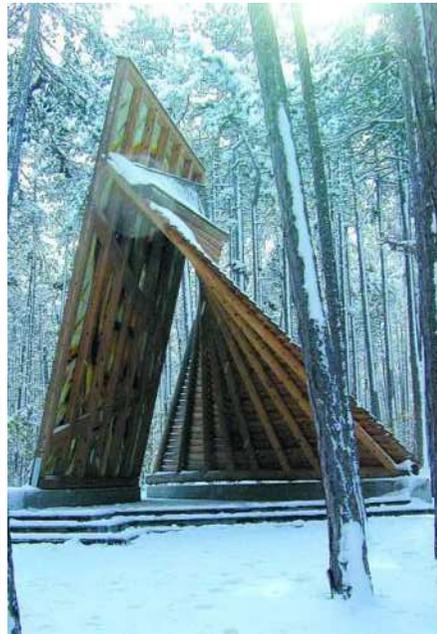


Hyparschalen





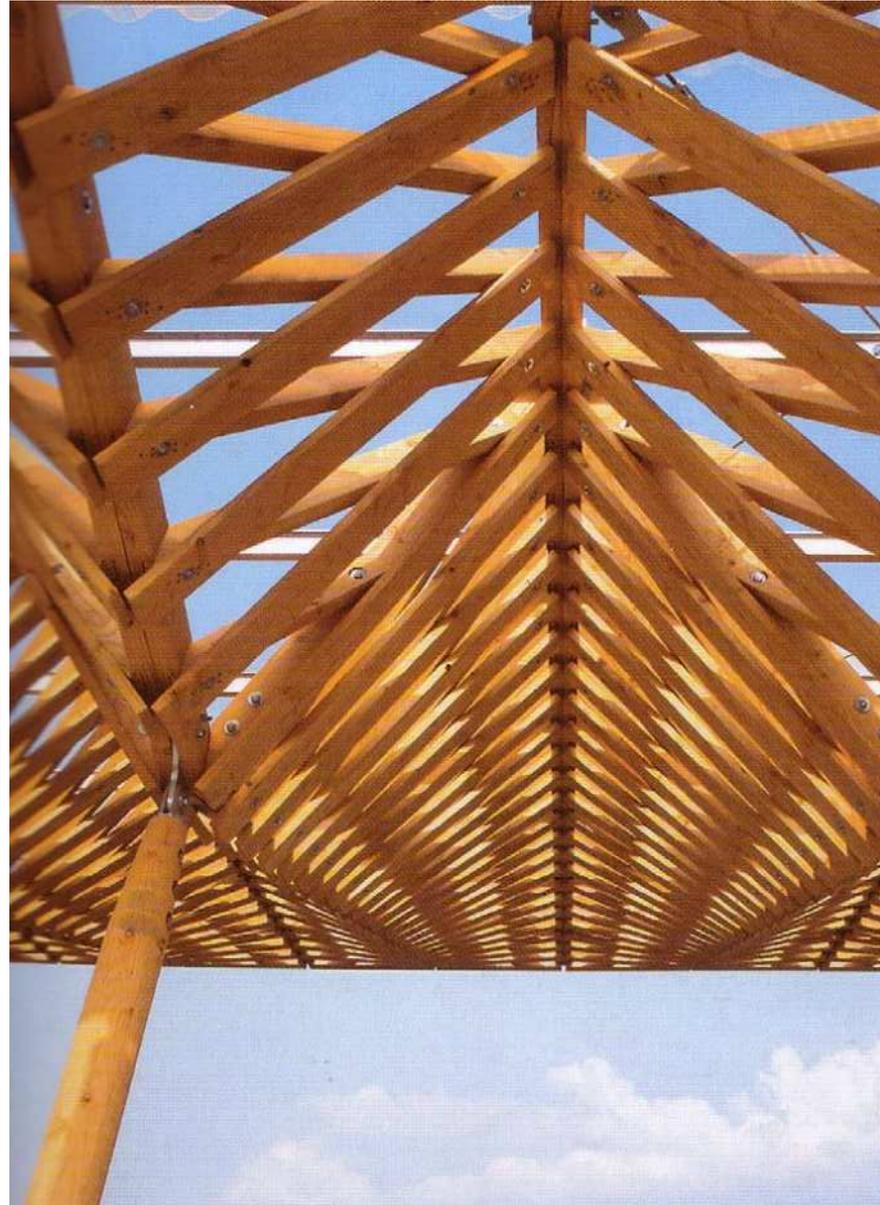
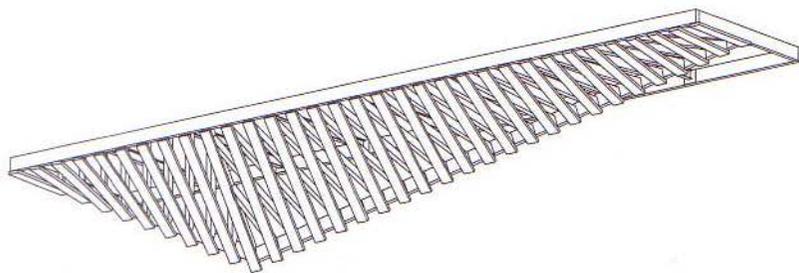
G. Scholz, Pavillion
Dortmund, 1969



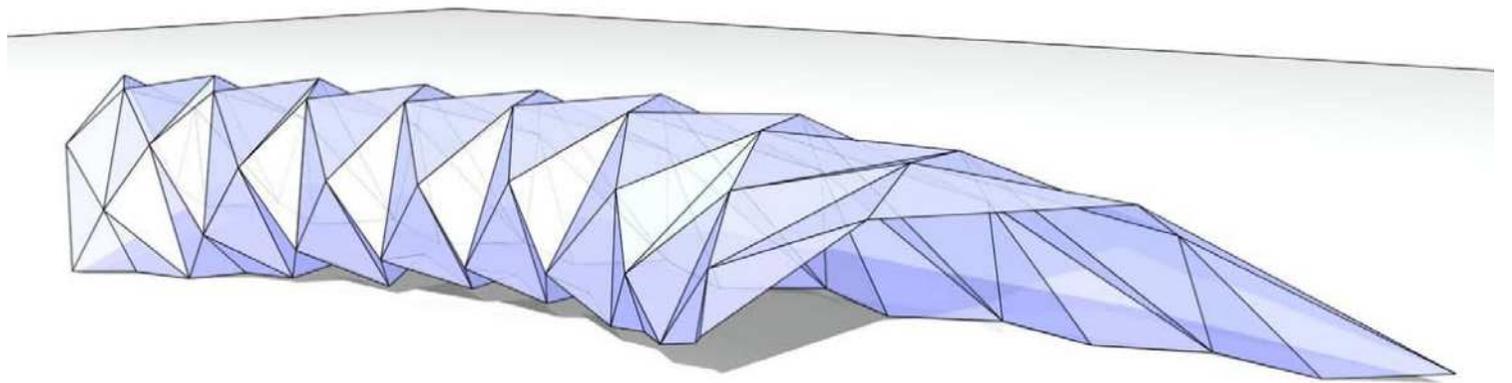
Vinzenz Kapelle
Hernstein

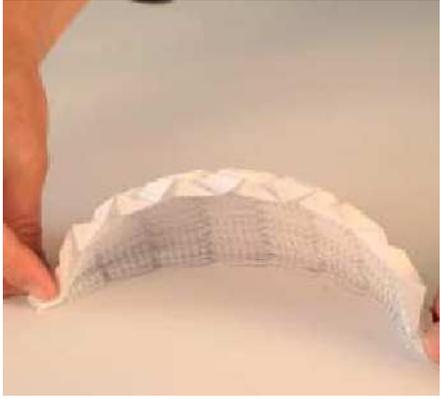
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Barthélémy & Grino Architectes, Tribünenüberdachung, Nanterre

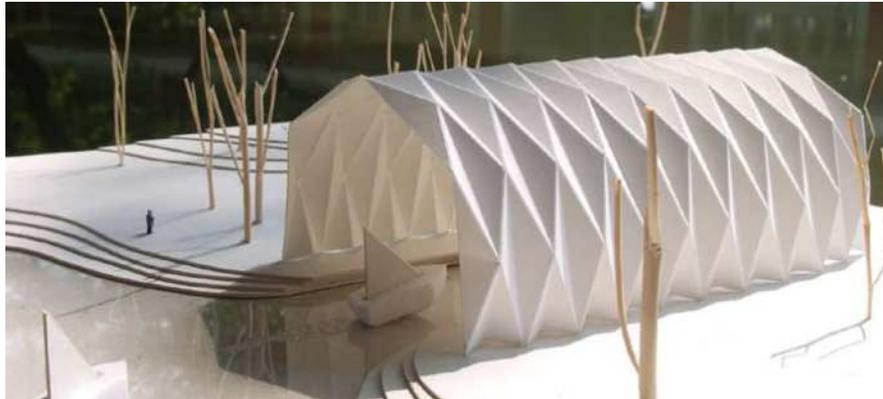


Faltwerke

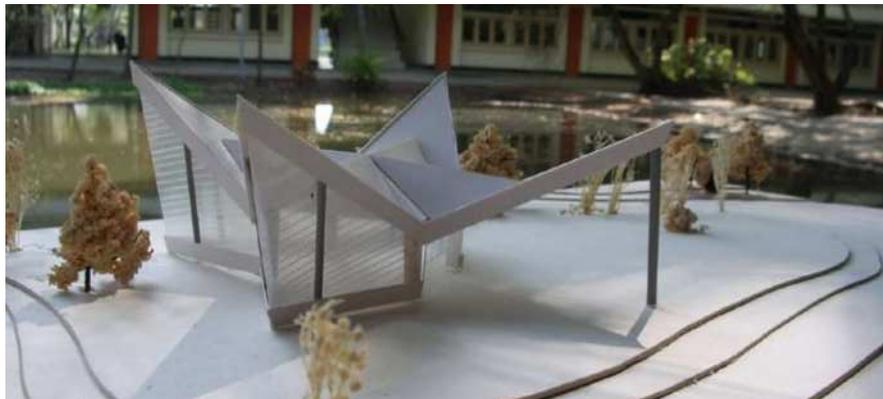




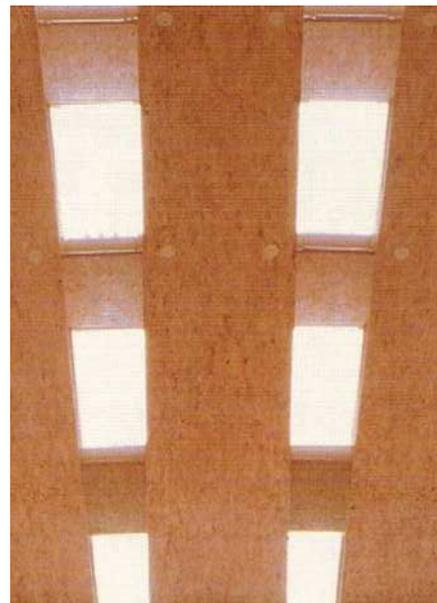
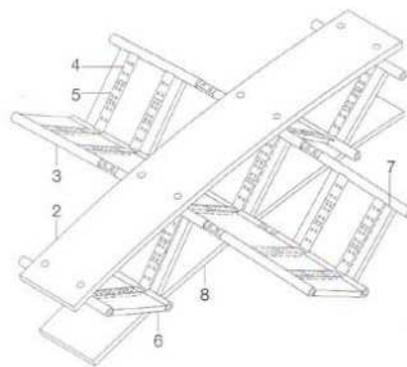
IBIOS Institut
EPFL Lausanne



Studentenentwürfe
KMIT Ladkrabang

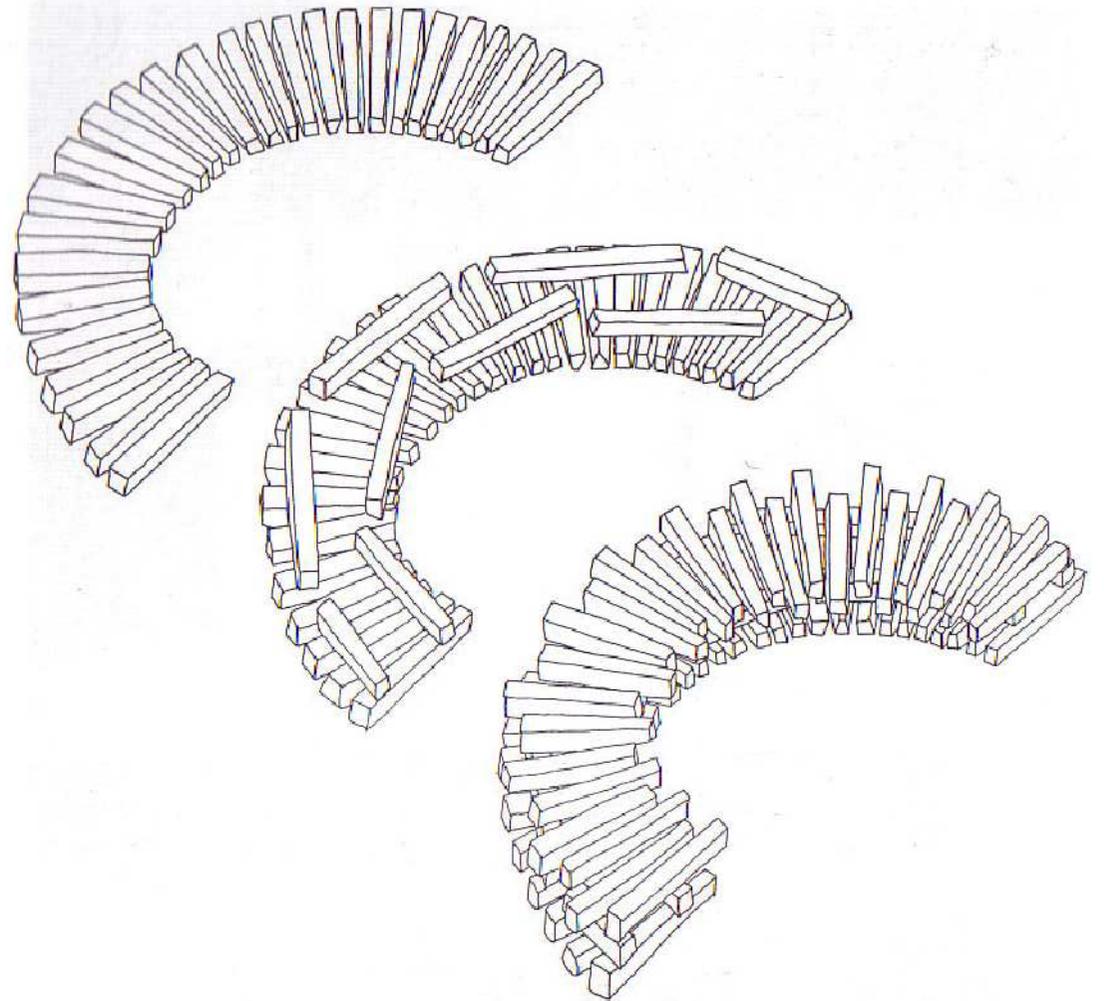


Shigeru Ban, Sporthalle, Odate

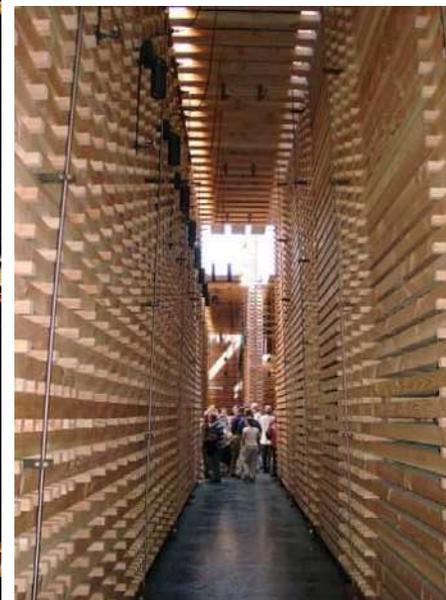


Katharina Leitner
Kasseler Holzbau
Kongress

Stäbchen



Peter Zumthor, Pavillion Schweiz, EXPO 2000





Quinze
Burning Man



Quinze & Milan
Design Post Cologne

Weblinks

Holzinfo:

<http://www.holzwurm-page.de/>
Holzarten, Techniken, EDV/CNC

<http://www.proholz.at/>
Holzarten, Artikel, Bauten

[http://www.bkgl.de/wir ueber uns/schuelerseiten/holzarten/index.htm](http://www.bkgl.de/wir_ueber_uns/schuelerseiten/holzarten/index.htm)
Holzarten - technische Merkmale

Holzhandel:

Adressenverzeichnis sortiert nach Land, Händler, Holzverarbeitung, -art, -nutzung...

<http://www.globalwood.org>

<http://www.timberweb.com/>

<http://www.worldwoodtrade.com/>

Fachbegriffe:

http://www.bkgl.de/technik/holz/fachwoerterbuch/framemitte_fachwoerterbuch.htm
Deutsch, Englisch, Französisch