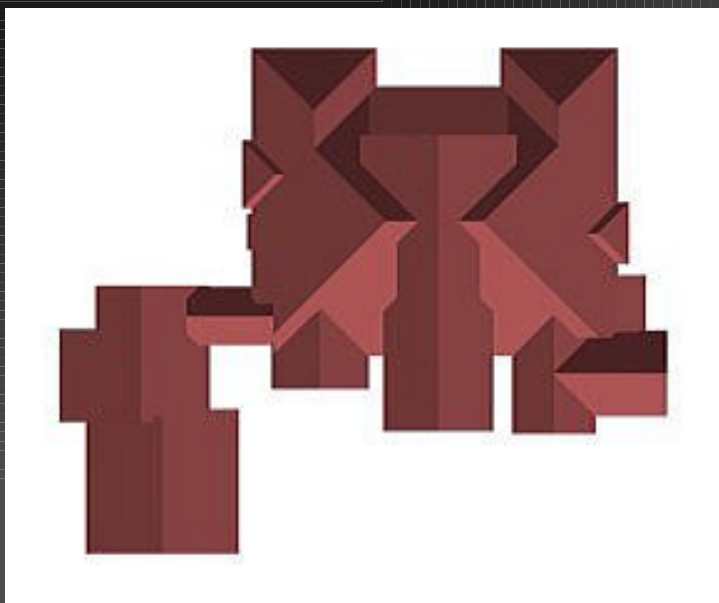
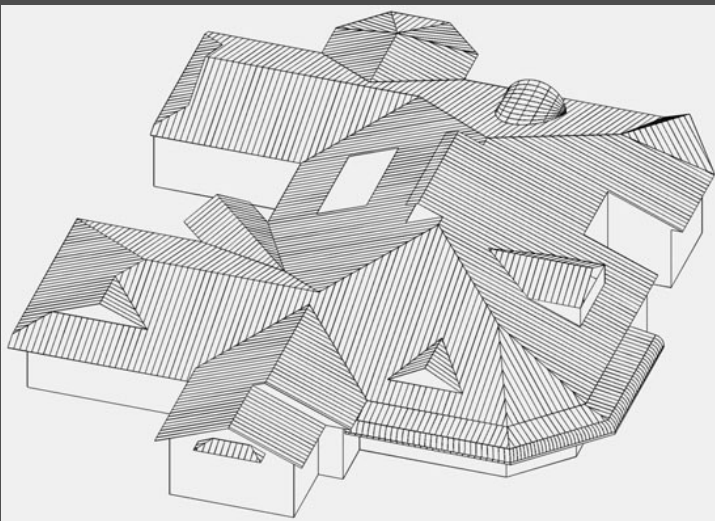


coberturas



DESENHO DE ARQUITETURA I
PUC-RIO

classificação

- coberturas com estruturas de apoio (paredes, pilares, treliças, tesouras, malha espacial)
 - lajes
 - telhados
 - membranas tensionadas
 - coberturas autoportantes (não há separação entre estrutura e coberta)
 - abóbadas e cúpulas
 - cascas
 - cobertas suspensas
 - cobertas infladas
 - malhas espaciais
-

coberturas autoportantes

- abóbadas

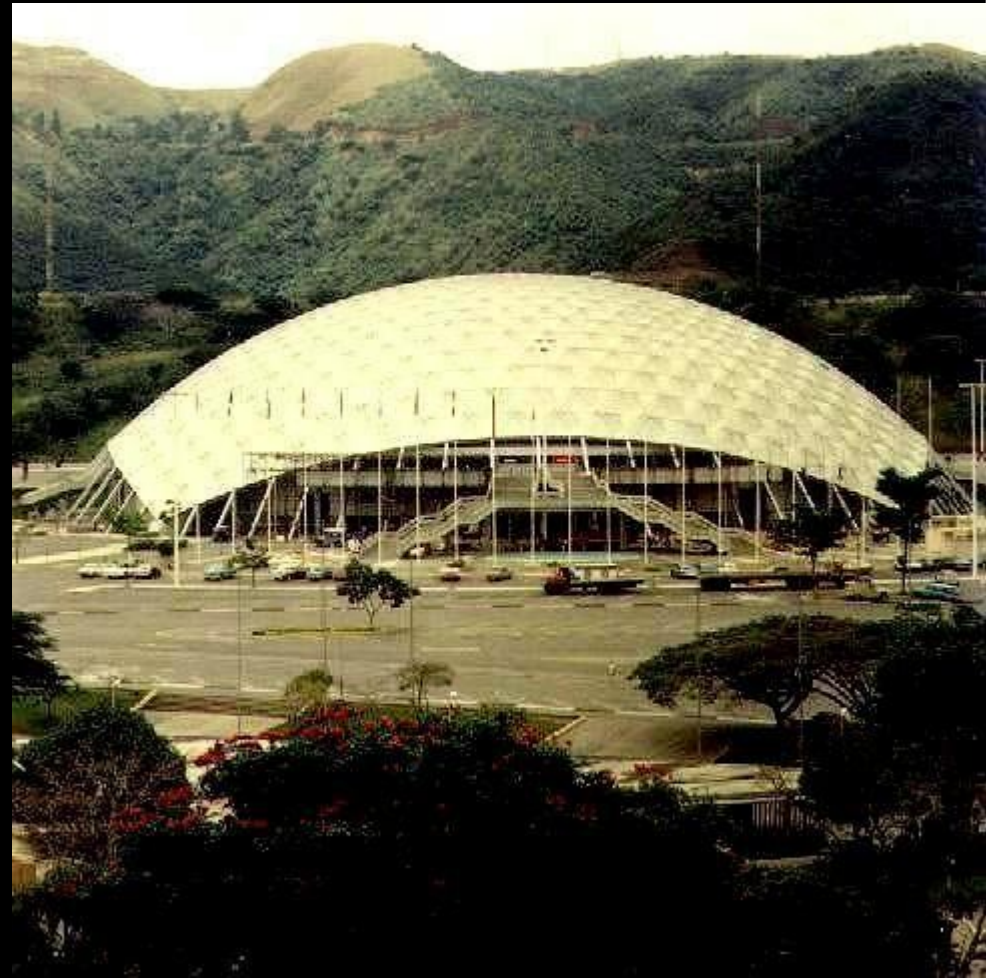
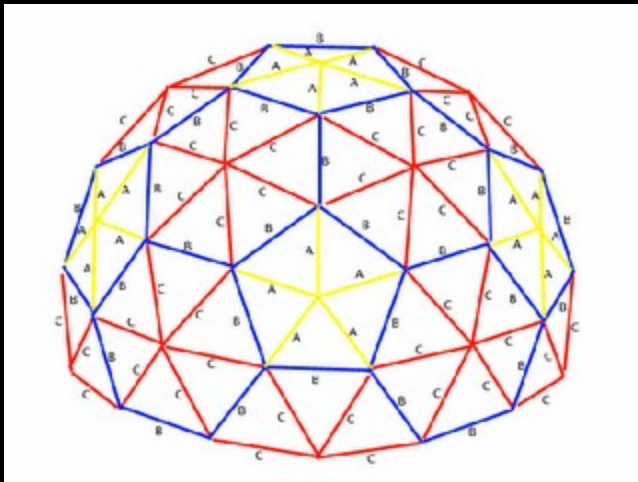


Escola em Fares, Egito (Hassan Fathy, 1957)
http://archnet.org/library/sites/one-site.jsp?site_id=3791



coberturas autoportantes

- cúpulas geodésicas

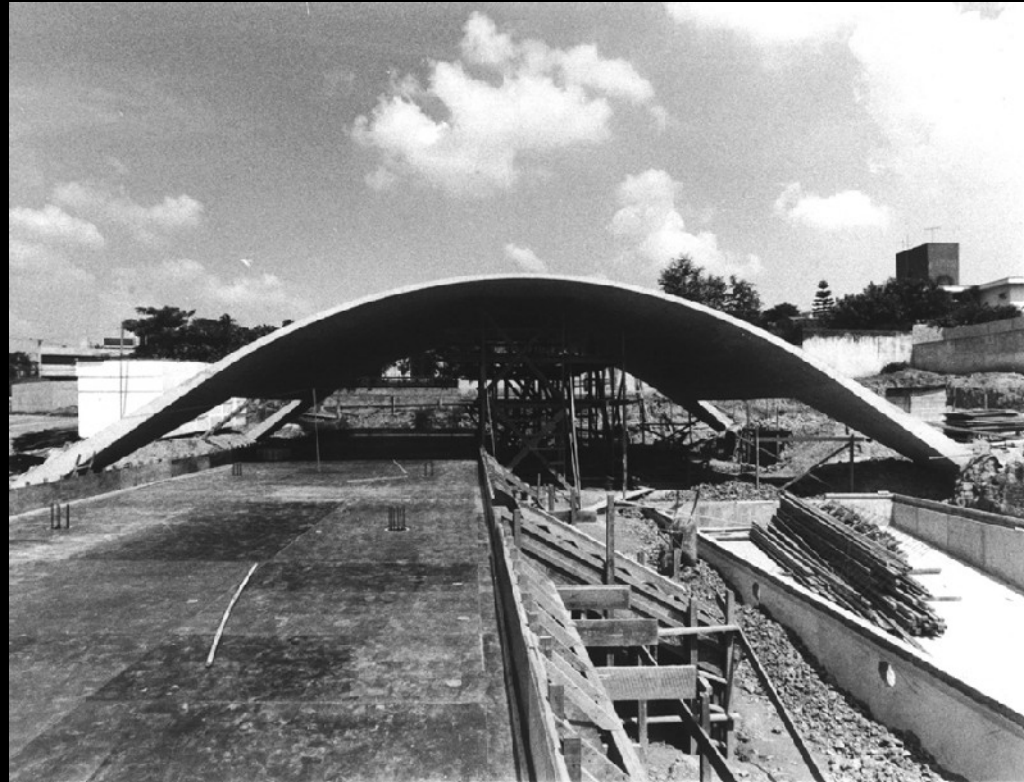


Poliedro de Caracas, Venezuela (Alcock James, 1972)
<http://arqtensegritysimdivina.blogspot.com/>

coberturas autoportantes

- cascas estruturais

Residência na Cidade Jardim
(Marcos Acayaba, 1972)
<http://www.marcosacayaba.arq.br/lista.projeto.chain?id=2>



coberturas autoportantes

■ coberturas infladas



Casa de chá nos jardins do Museu
de Artes Decorativas de Frankfurt
(Kengo Kuma, 2007)
<http://www.interactivearchitecture.org/category/inflatable>

membranas tensionadas



Pavilhão da Alemanha Ocidental - Expo 67,
Montreal, Canadá (Frei Otto e Rolf Gutbrod)
<http://www.arch.mcgill.ca/prof/sijpkes/arch304/D+C2004website/Website-2/germany-pavillion3.jpeg>

lajes planas

■ impermeabilizações

■ rígidas

- pinturas
- argamassa impermeável

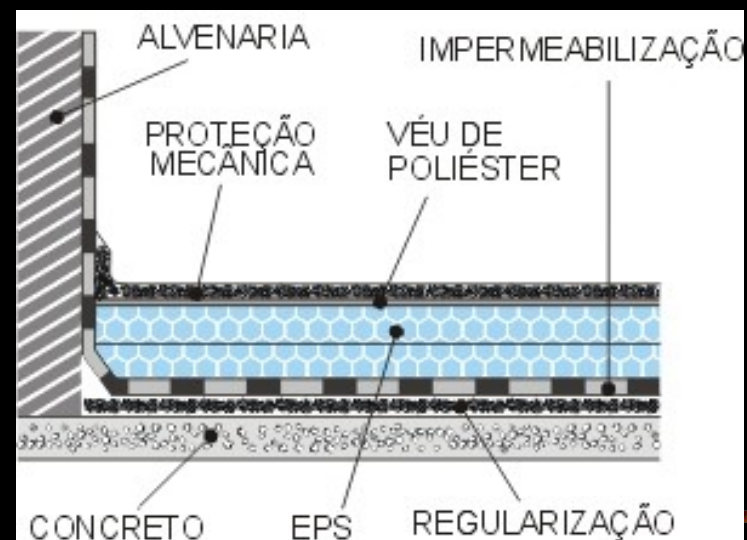
■ flexíveis

- membranas (no local)
- mantas (pré-formadas)

■ inclinação mínima de 1%

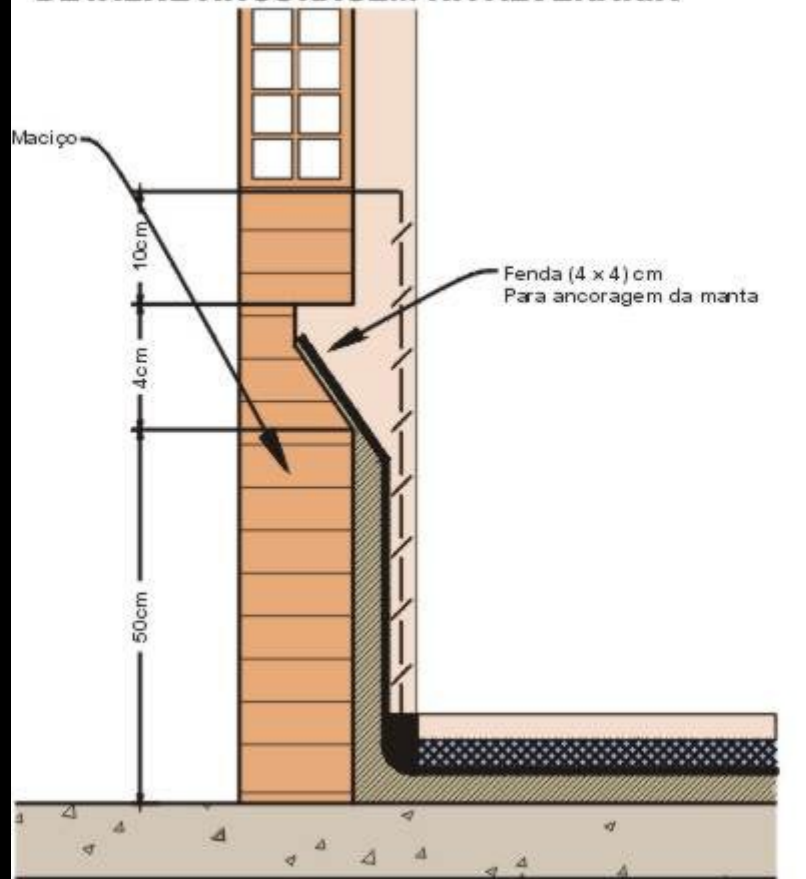
■ escoamento por ralos e buzinetes

■ dilatação / mudanças de umidade

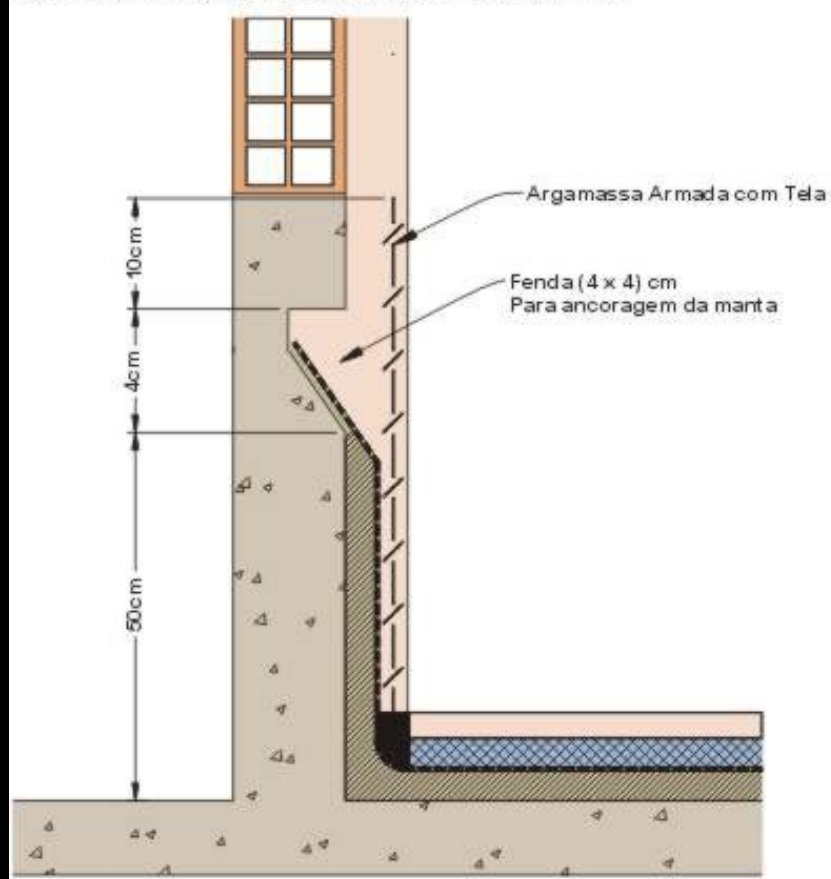


lajes planas

DETALHE ANCORAGEM NA ALVENARIA

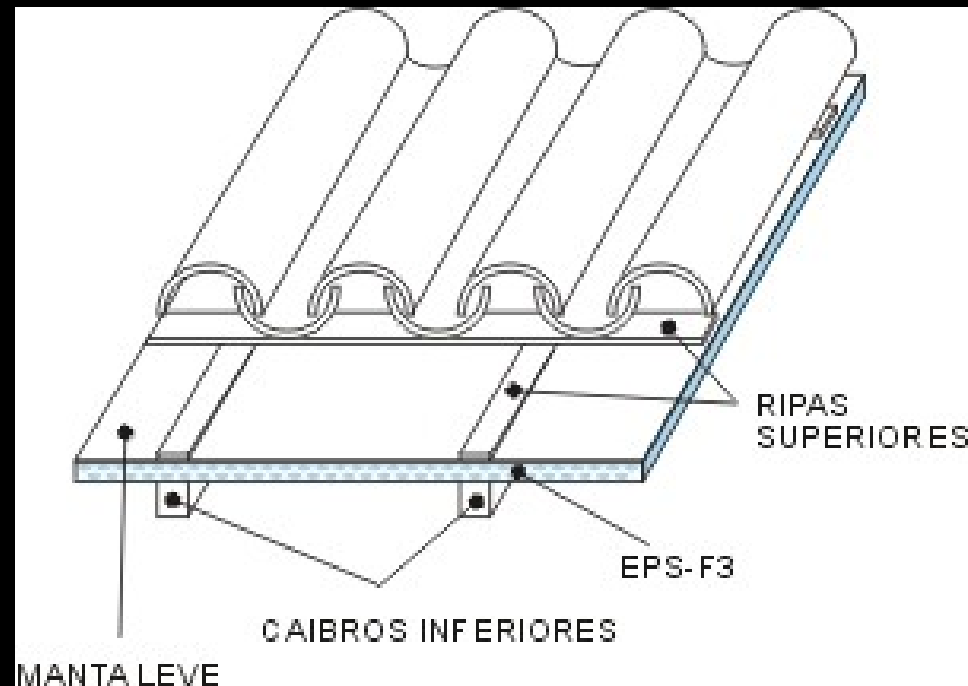


DETALHE ANCORAGEM NO CONCRETO

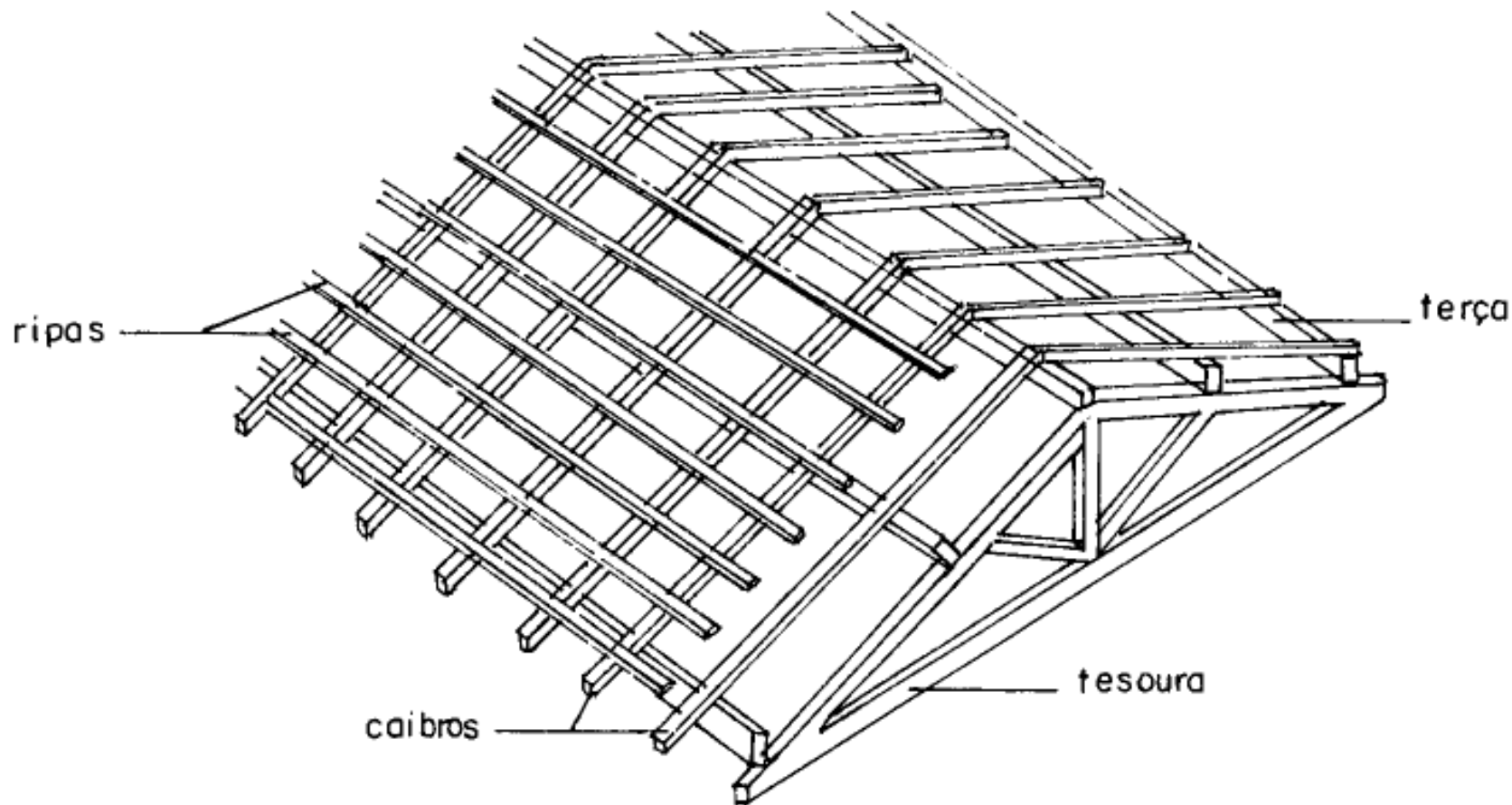


telhados

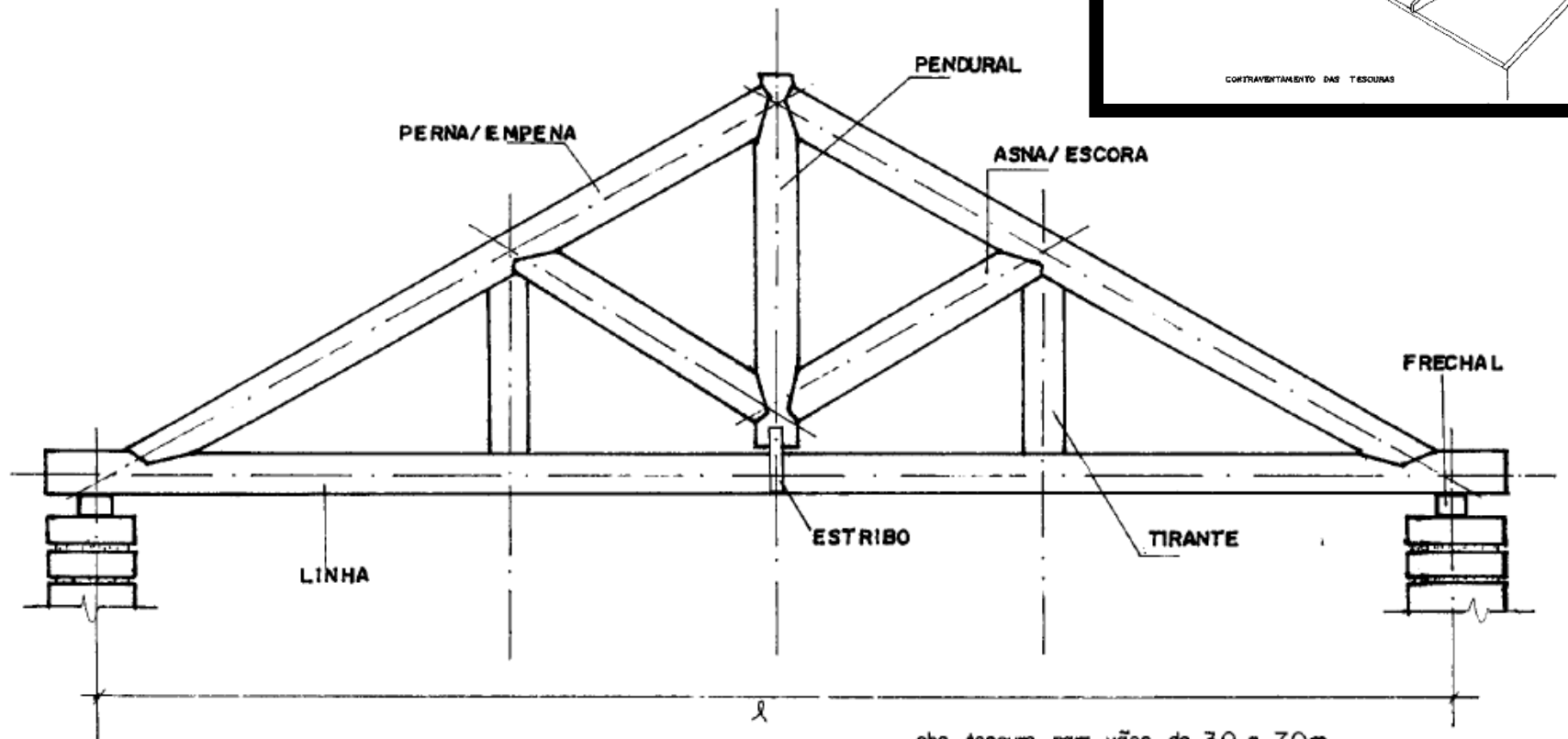
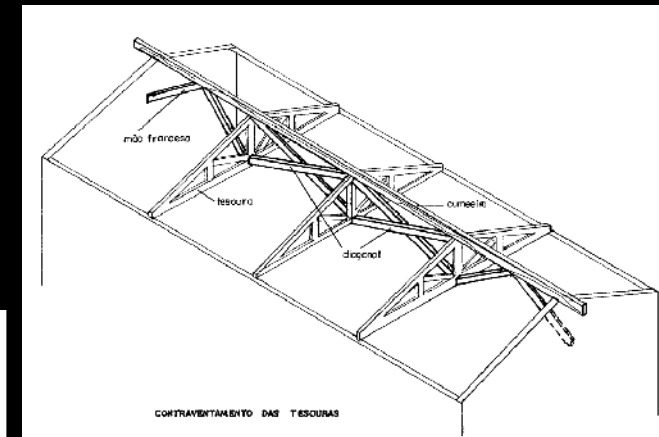
- madeiramento
- isolamento
- telhas



elementos construtivos

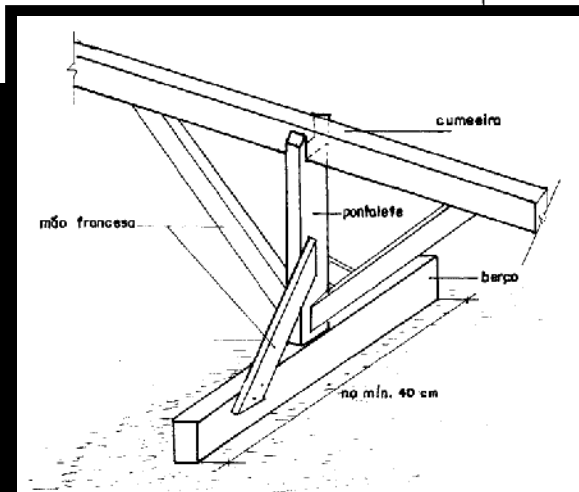
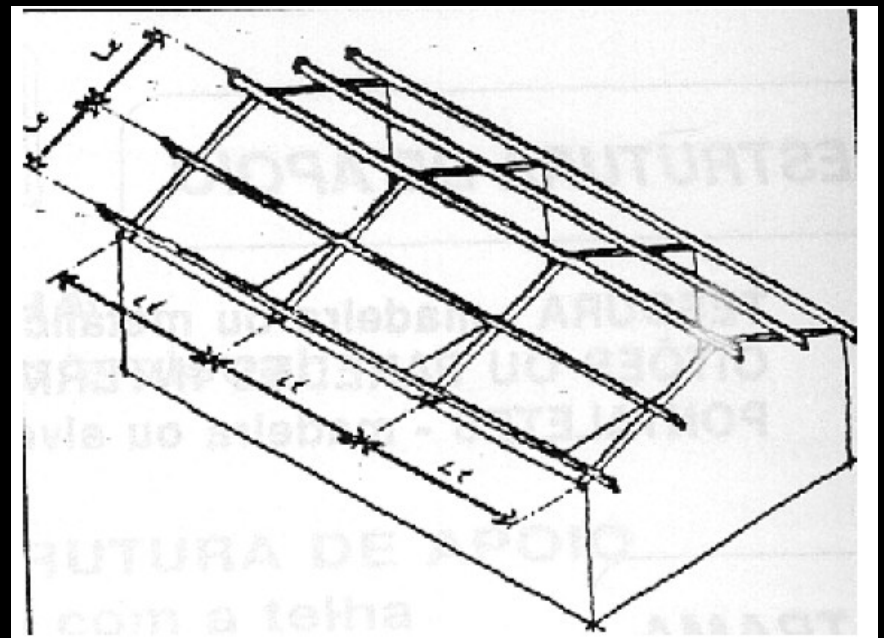
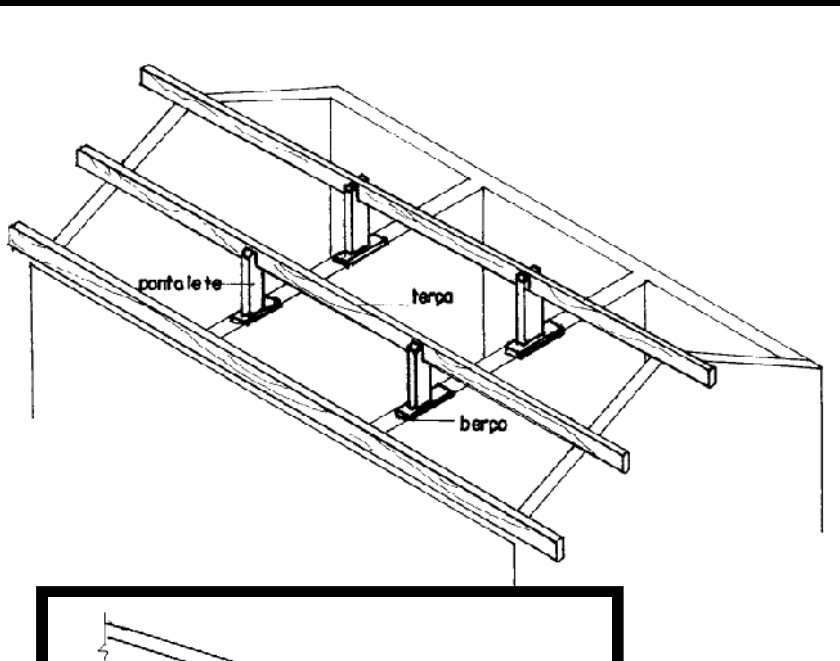


tesoura

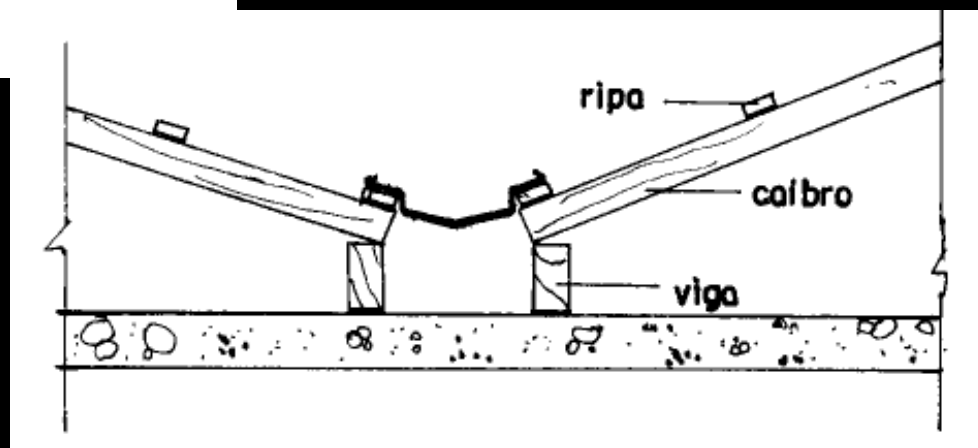
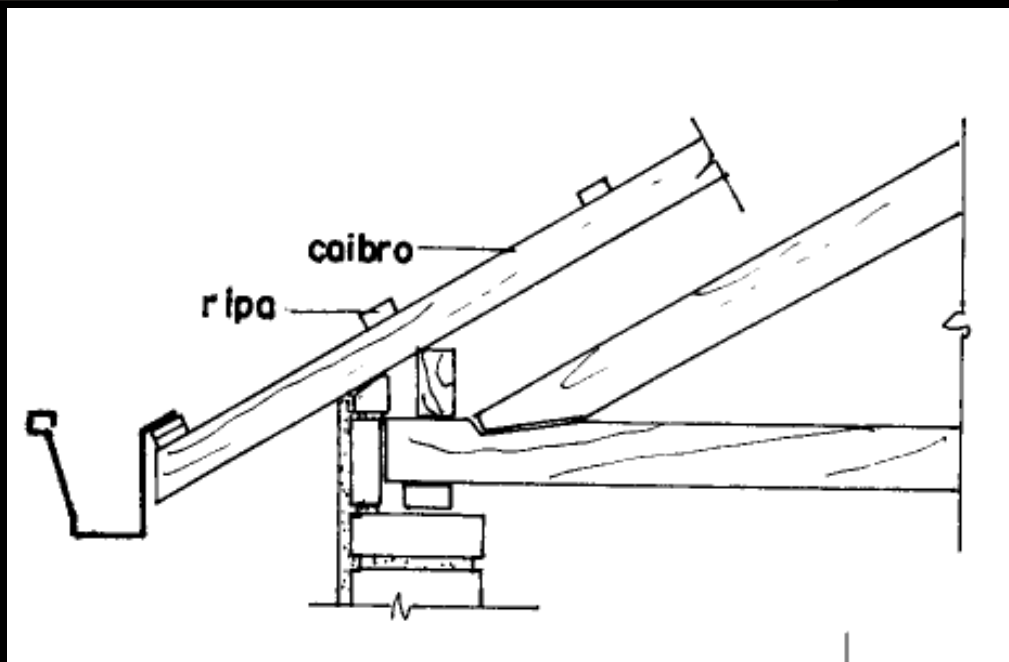


obs: tesoura para vãos de 3,0 a 7,0m

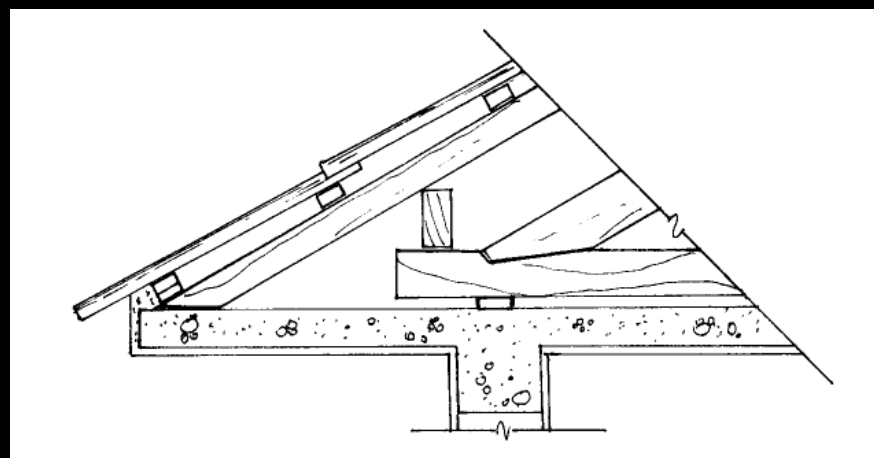
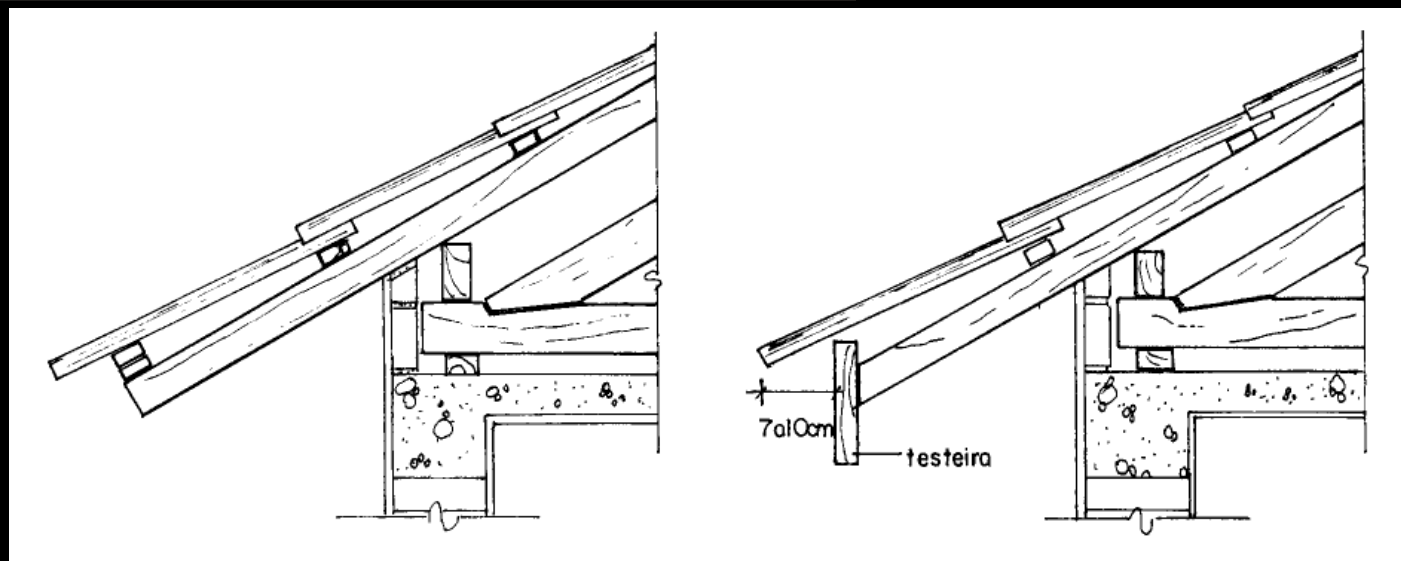
pontaletes e oitões



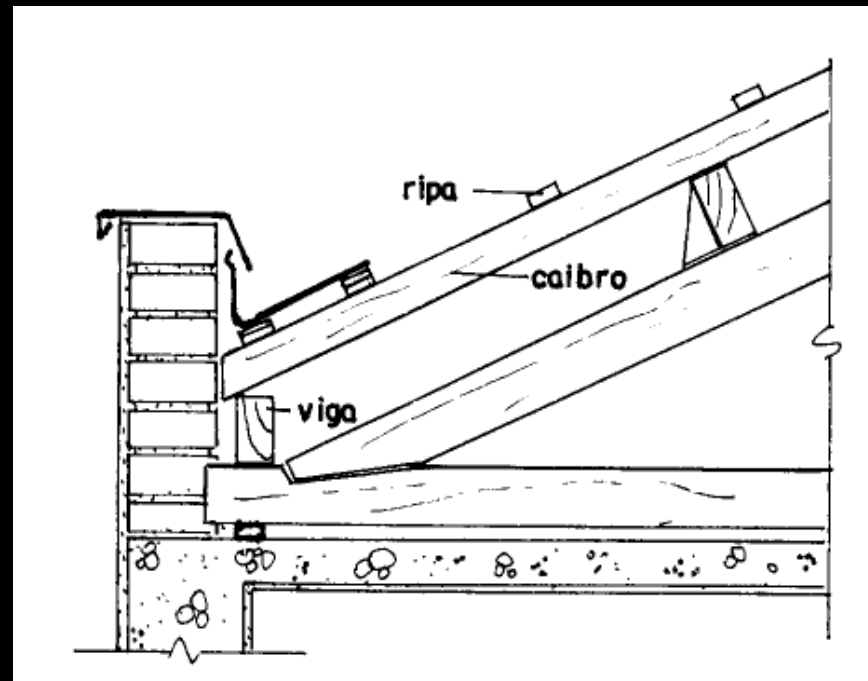
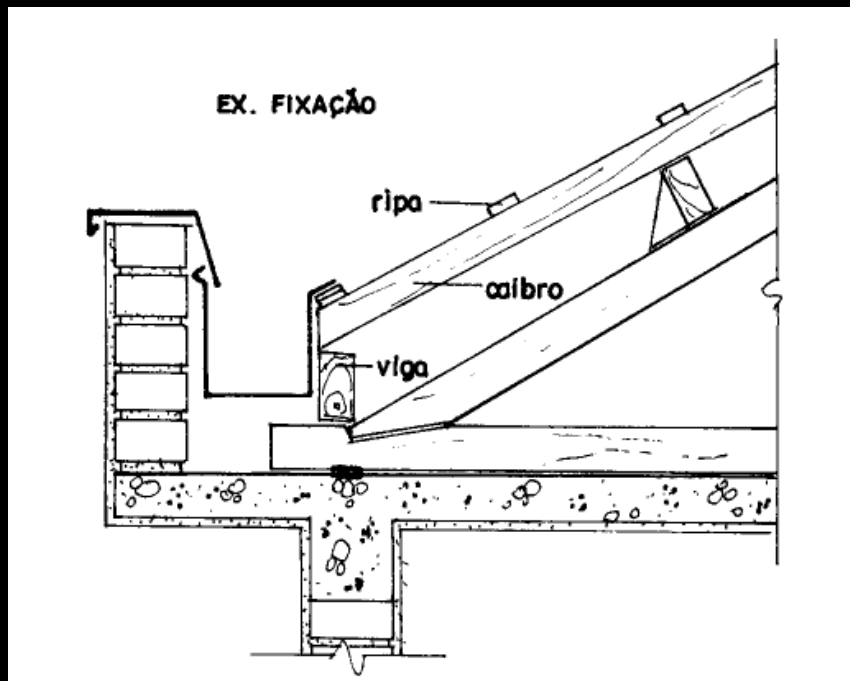
calha



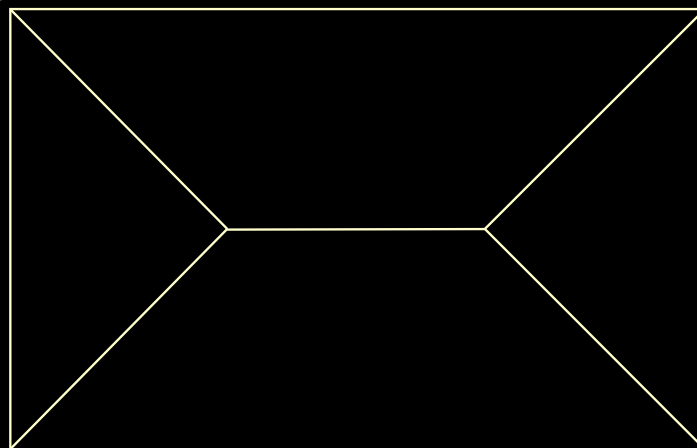
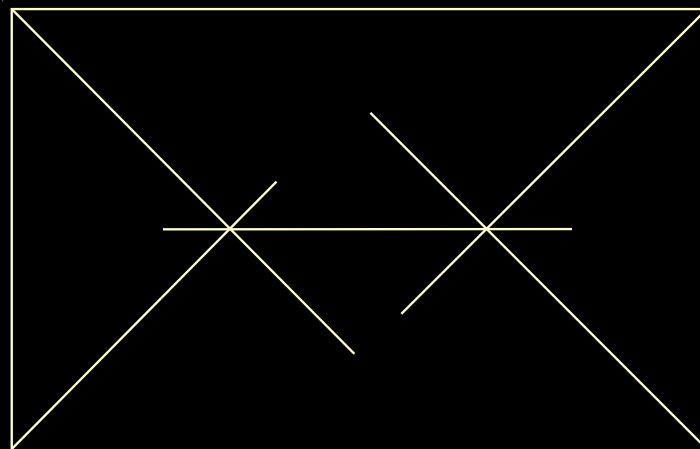
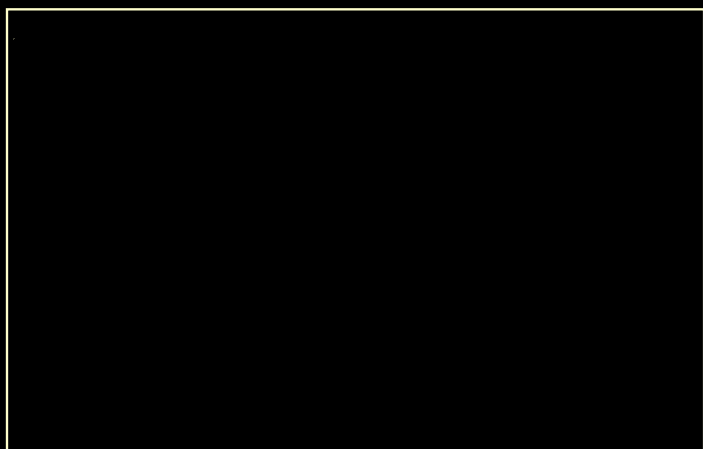
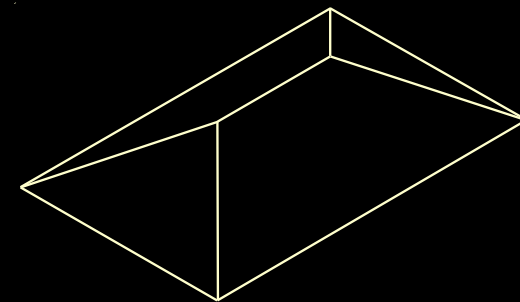
beiral



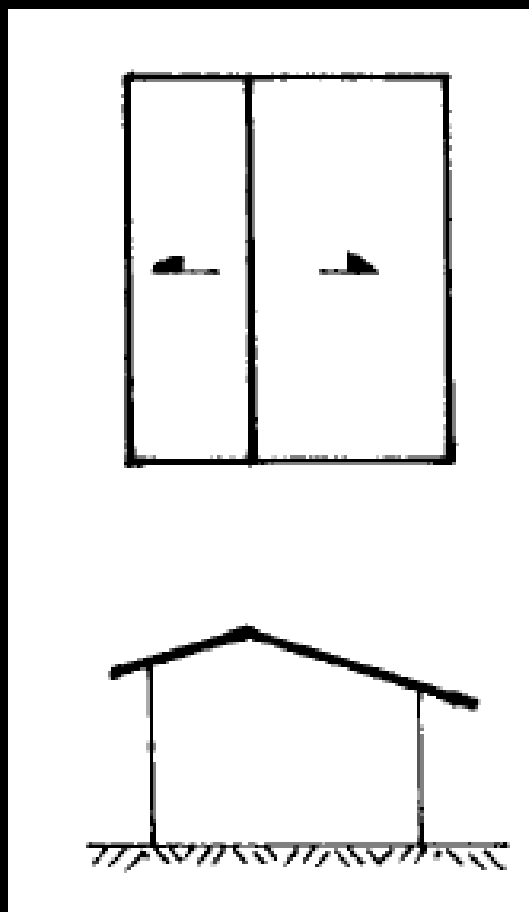
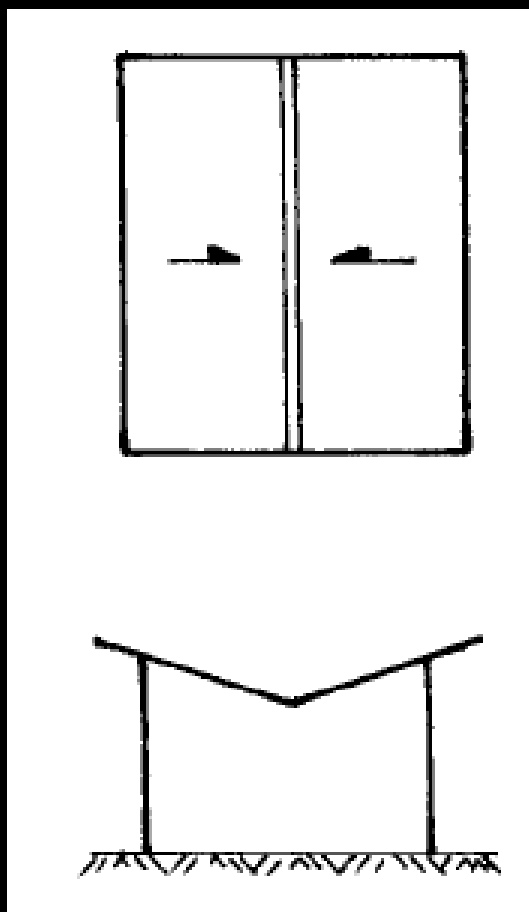
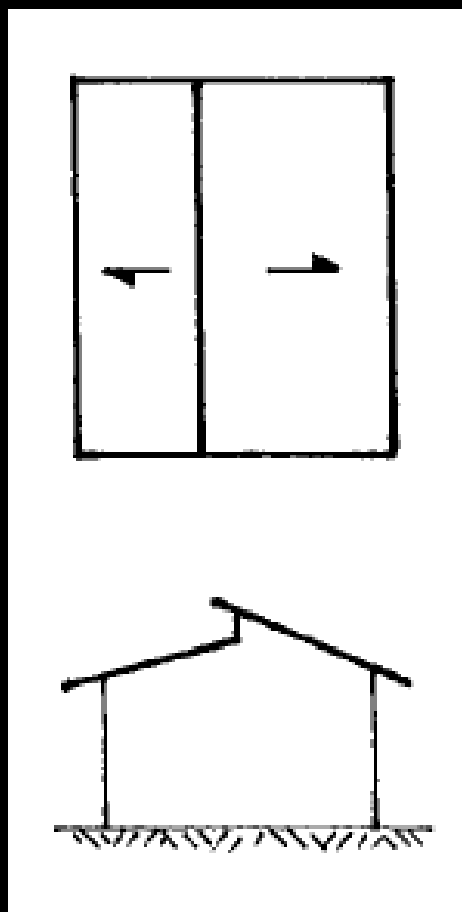
platibanda



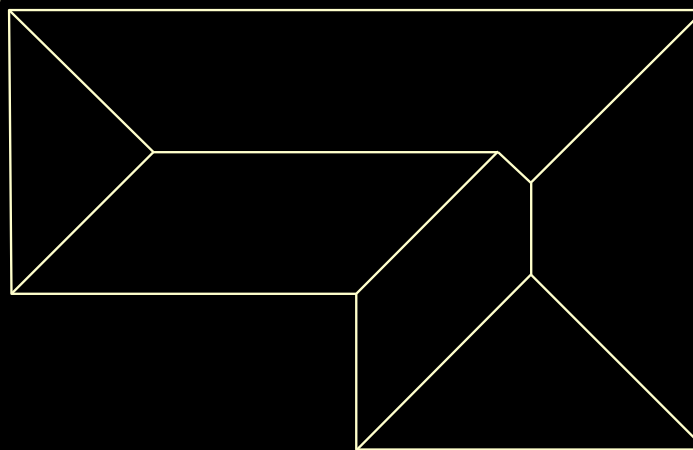
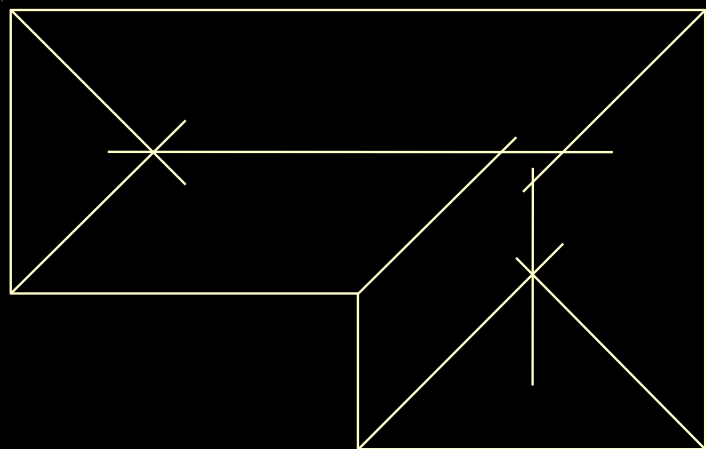
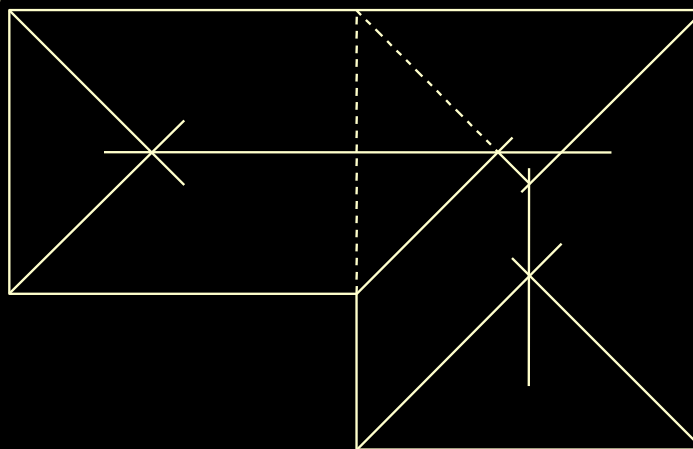
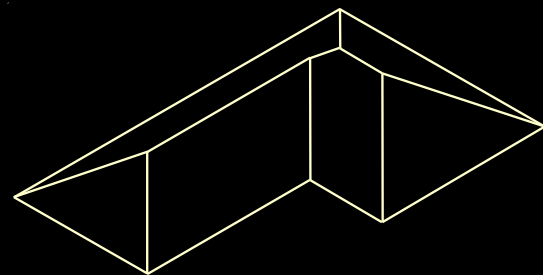
desenho - geometria



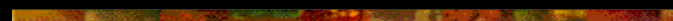
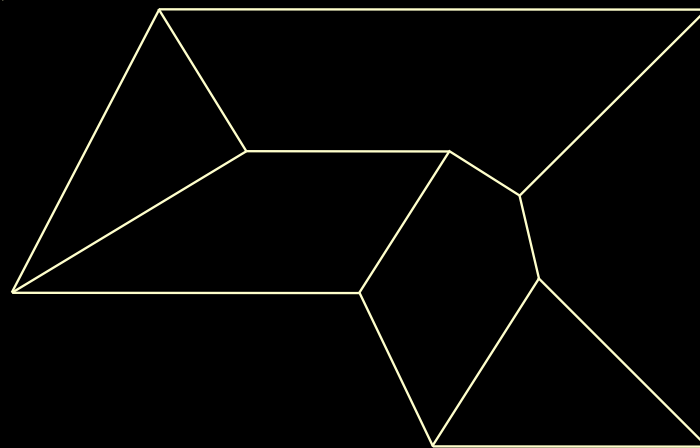
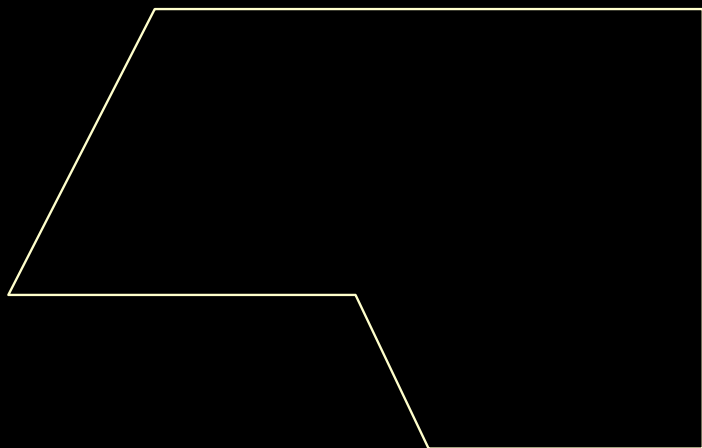
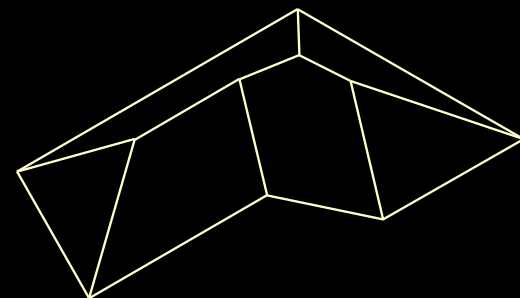
desenho - geometria



desenho - geometria



desenho - geometria



desenho - convenções

