STRUKTUR

Struktur : Sistem yang terdiri dari gabungan beberapa elemen yang terkoneksi

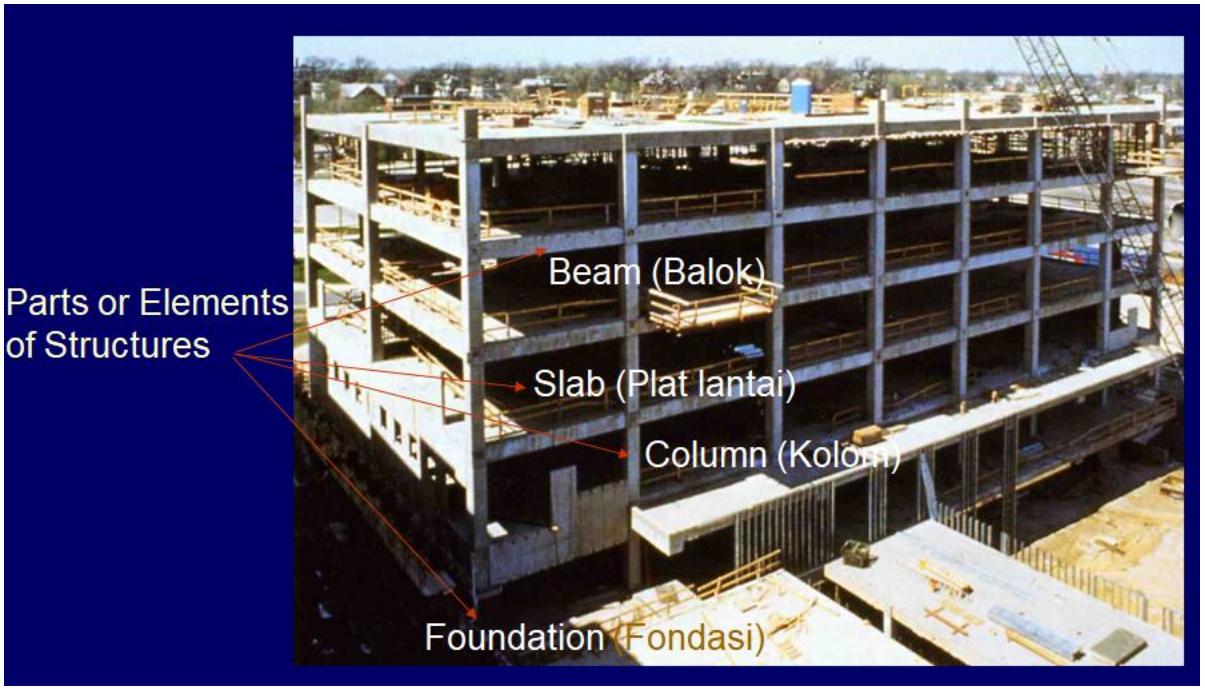
Contoh :

- Gedung
- Jembatan
- Menara
- Dam

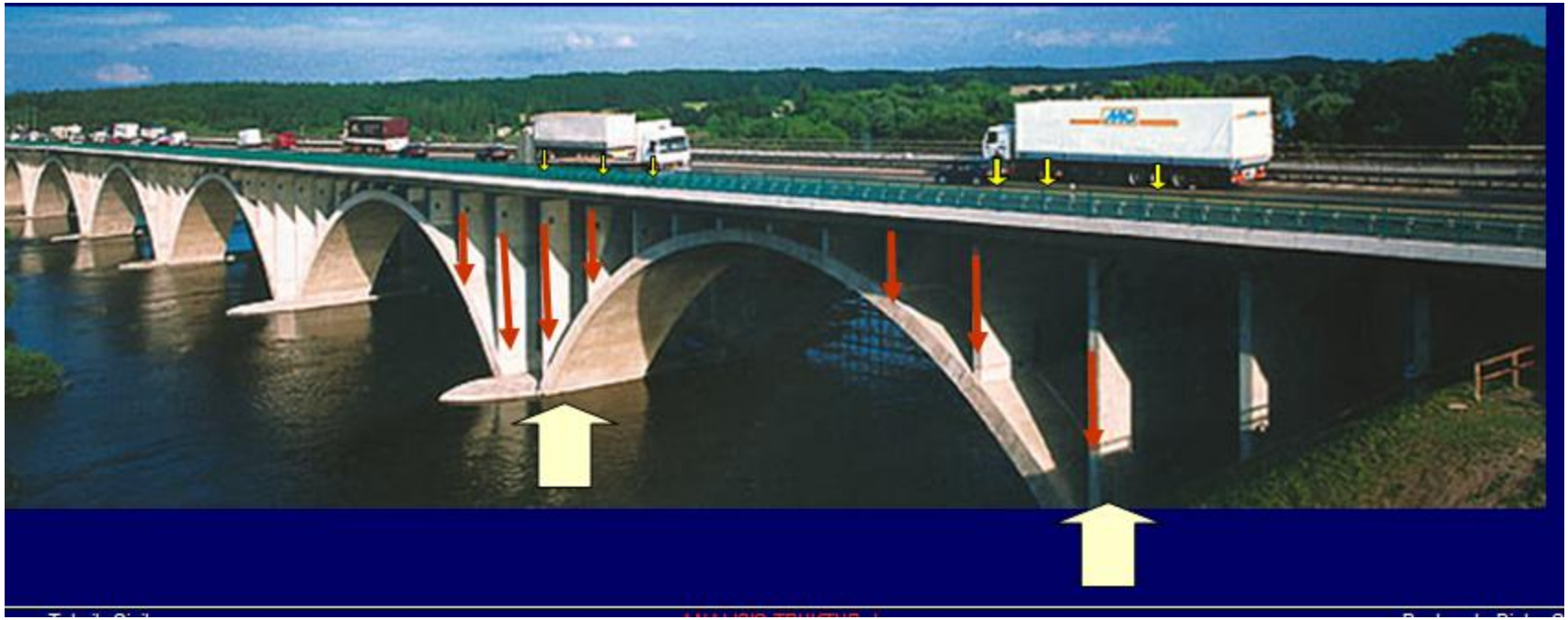
Elemen Struktur

Bagian (Elemen) Struktur)

Elemen Struktur



Elemen Struktur



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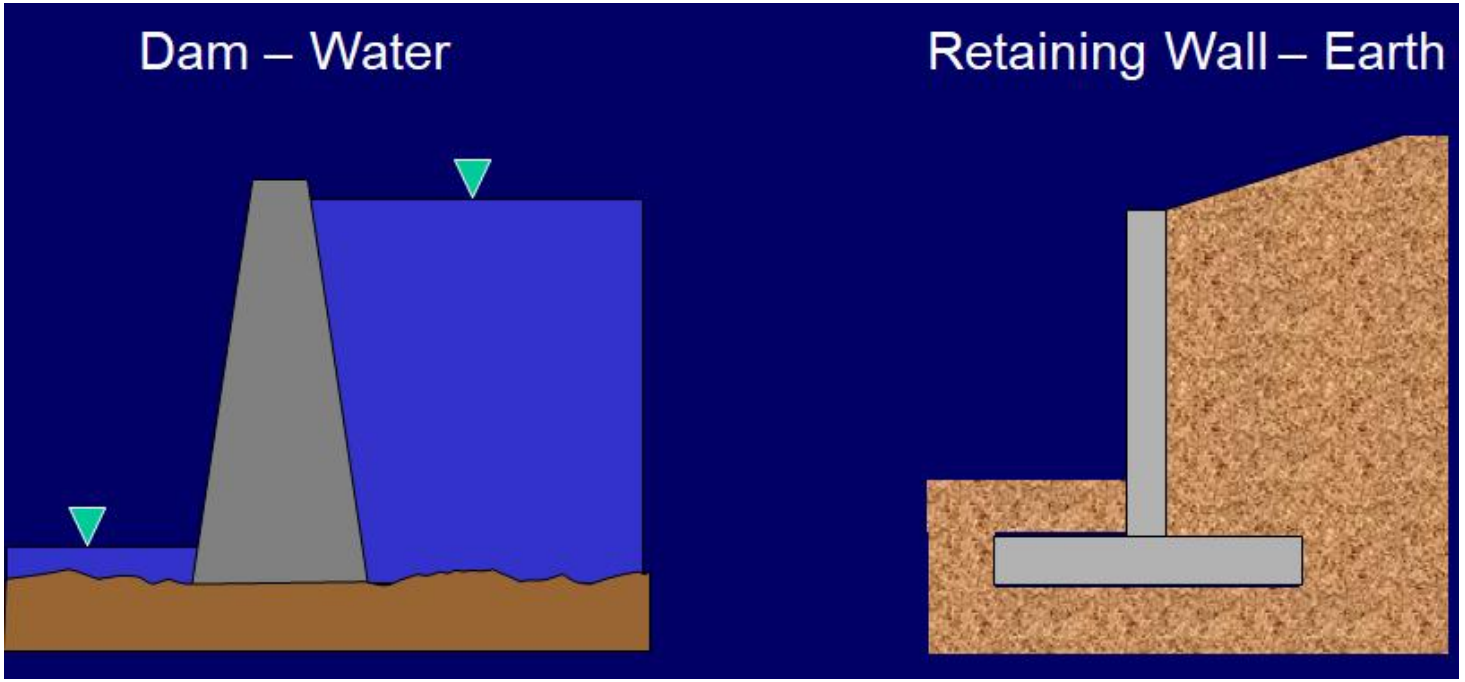
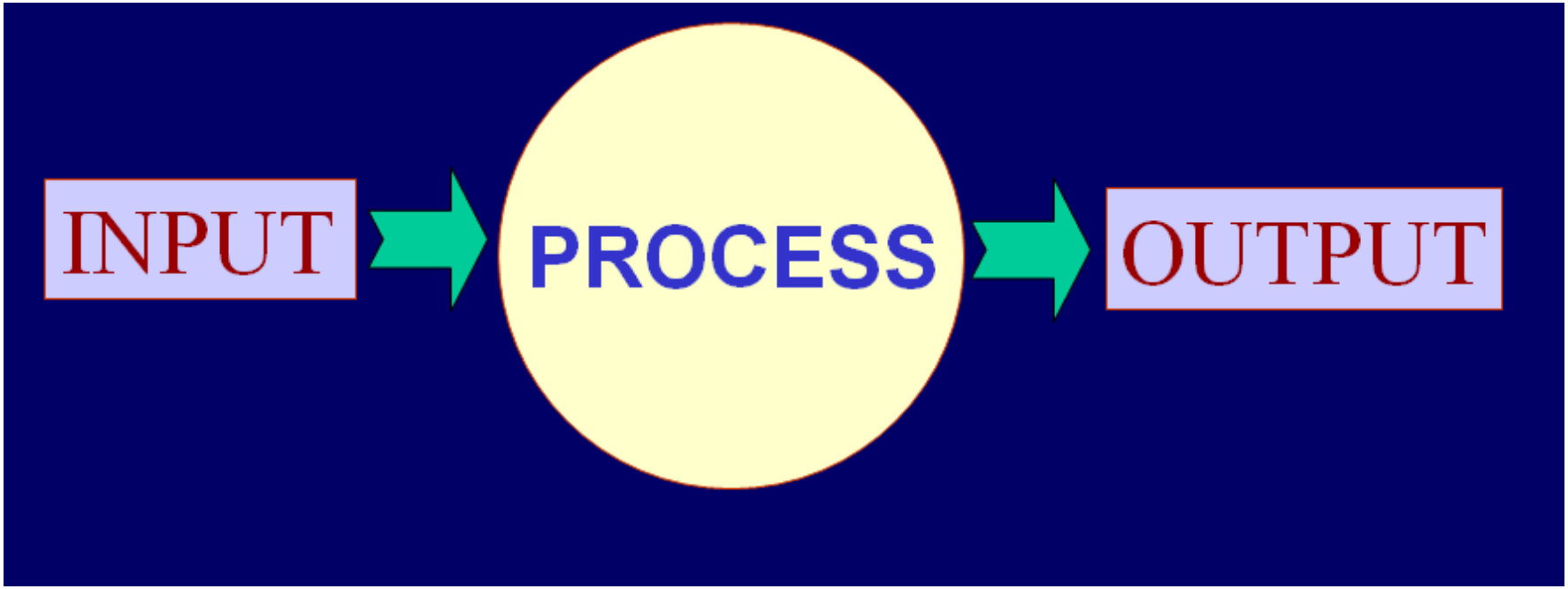


Mekanisme



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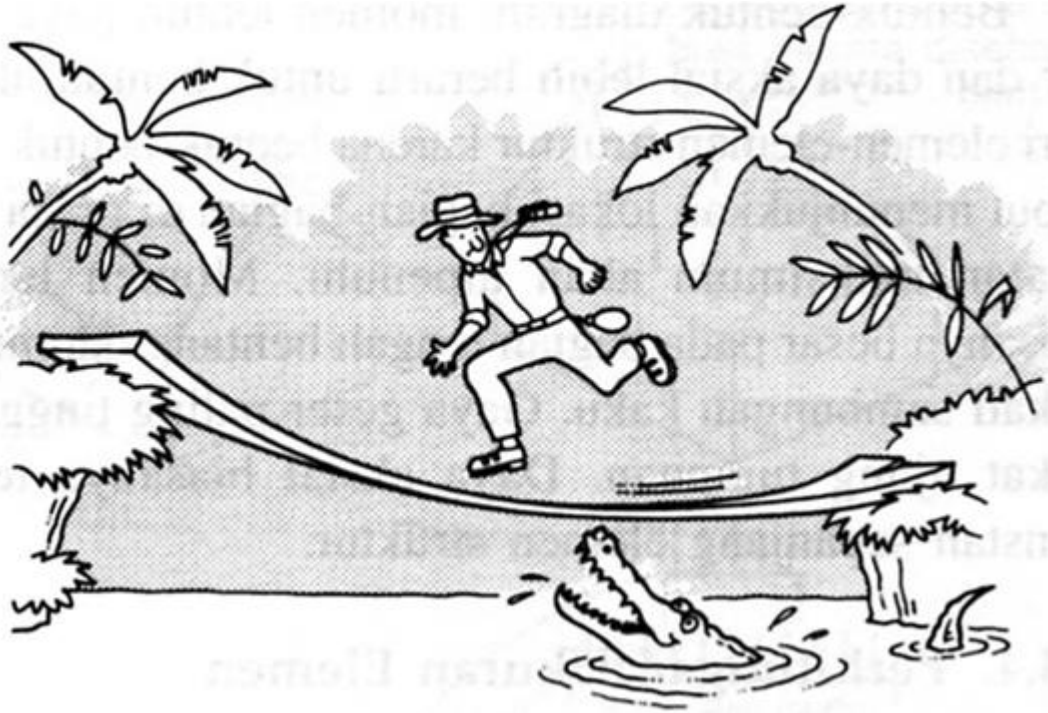

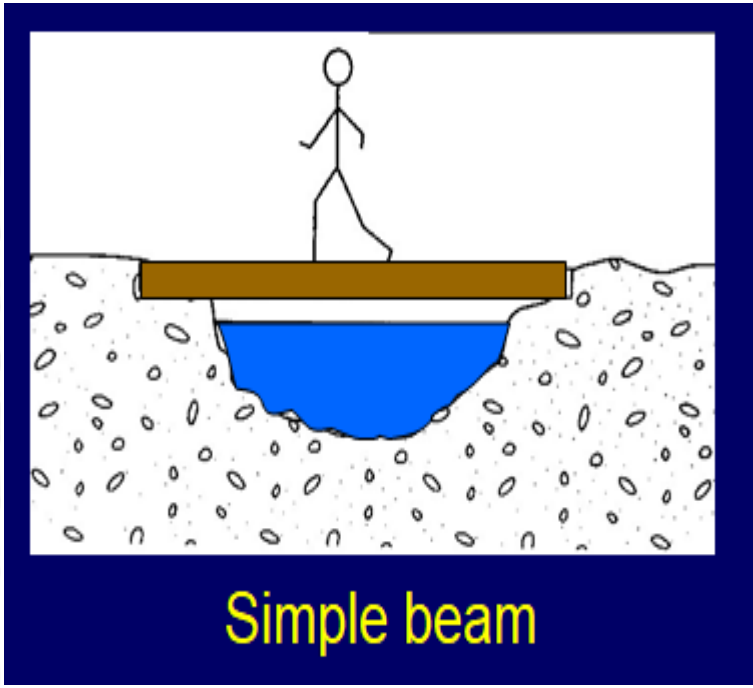

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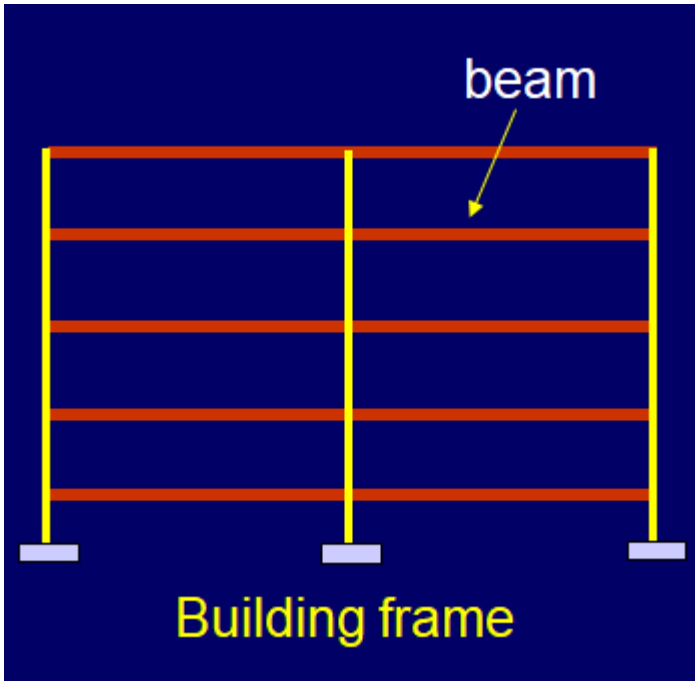
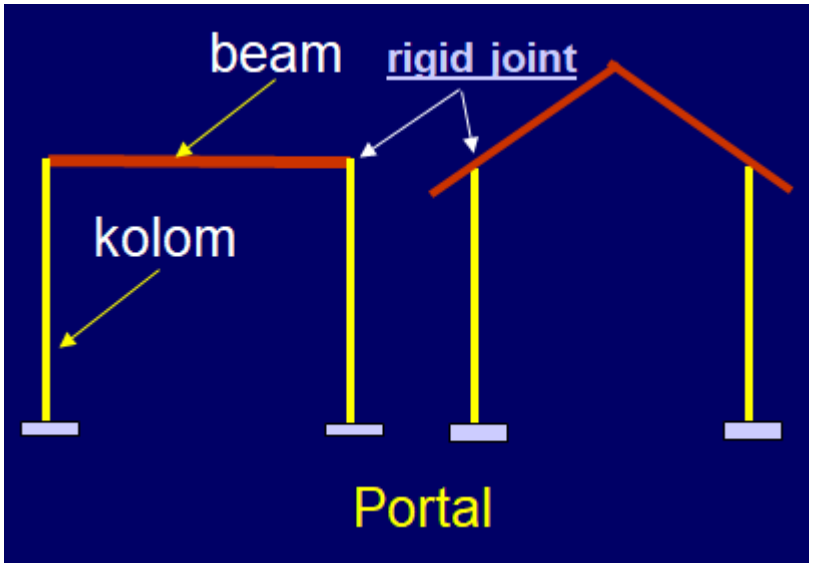
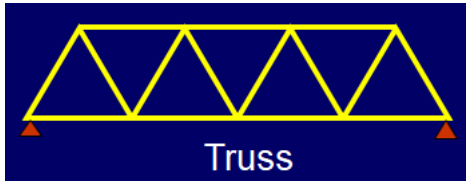
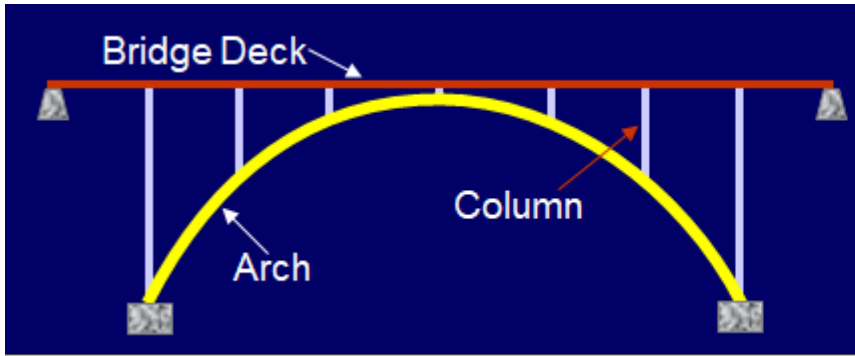
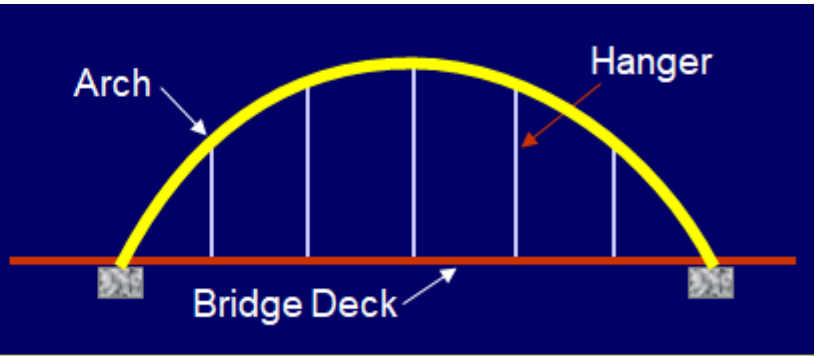


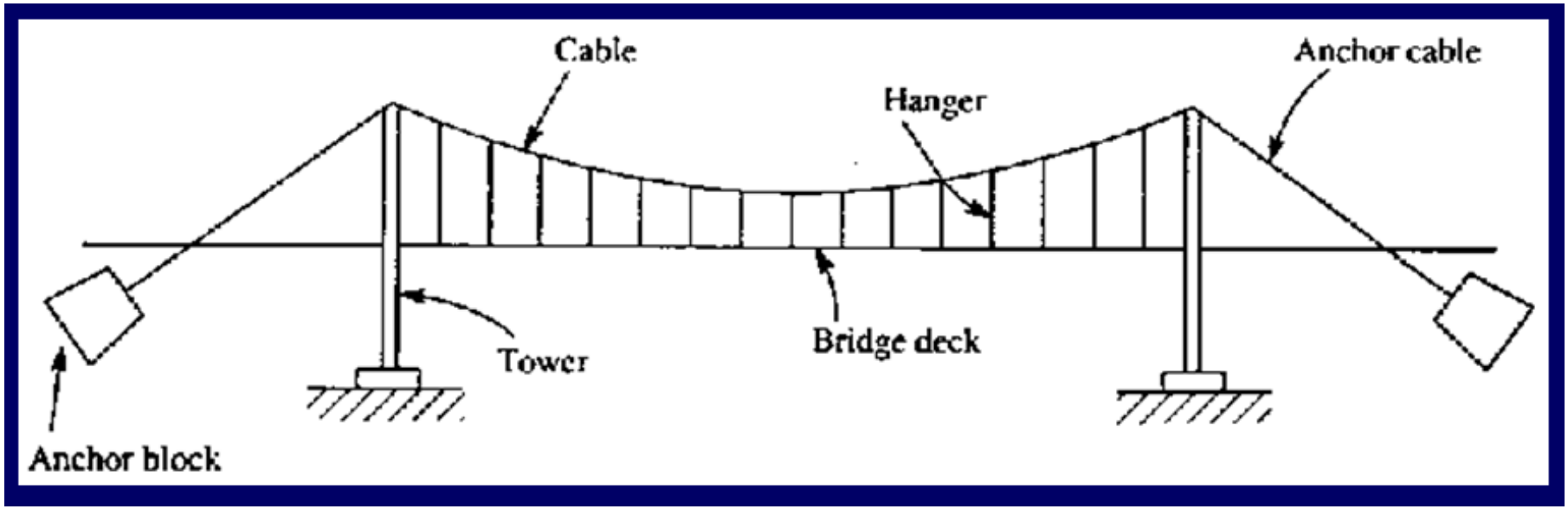








Struktur Kabel (Cable) untuk jembatan bentang panjang (atau bentang pendek) difungsikan untuk mendukung lantai jembatan. Kabel melewati ujung atas pilar dan diikat sempurna (fixed) pada ujung jembatan dengan blok angkur secara massive (Anchor block)

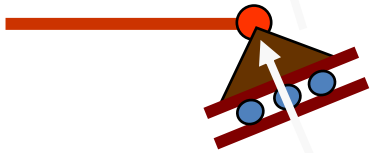


SISTEM TUMPUAN

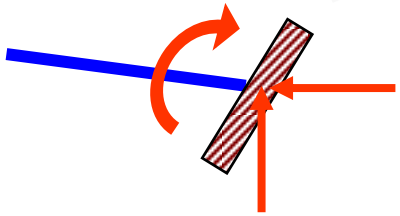
Beban pada **struktur** diteruskan ke pondasi melalui sistem tumpuan (Support).

Dalam prakteknya bentuk tumpuan terlihat rumit (kompleks). Dalam analisa struktur menggunakan teori mekanika, sistem ini diidealisasi.

Tumpuan sendi dapat menahan gaya horisontal dan vertikal, tetapi tidak dapat menahan momen.

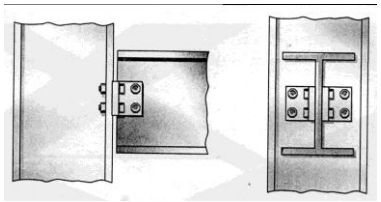


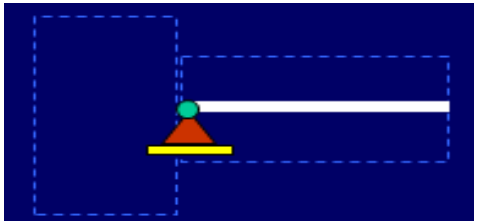
Tumpuan rol hanya dapat menahan gaya *tegak lurus pada bidang tumpunya*, dan tidak dapat menahan momen

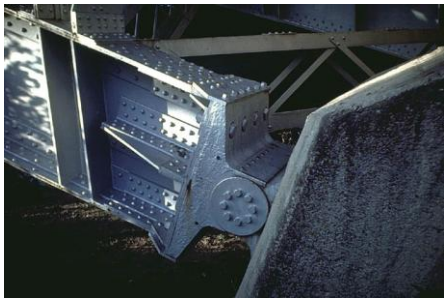


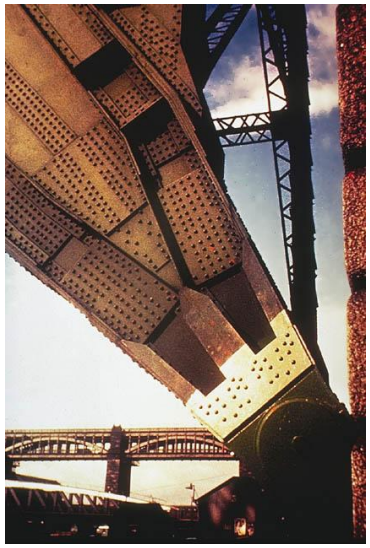
Tumpuan jepit dapat menahan gaya vertikal maupun horisontal dan dapat menahan momen

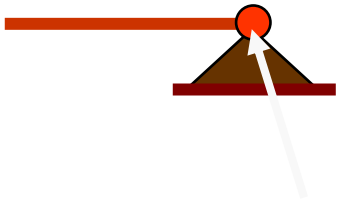
TUMPUAN SENDI











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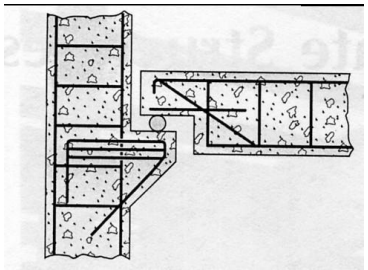
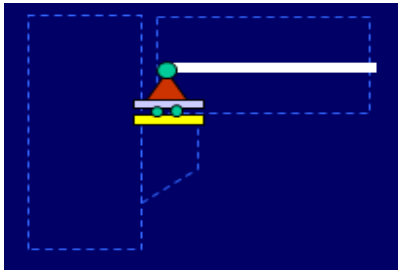
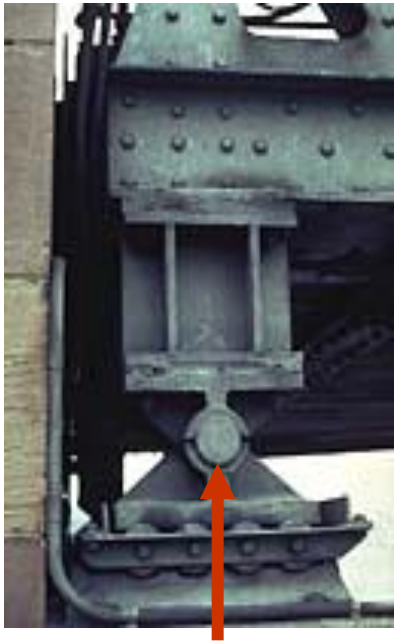
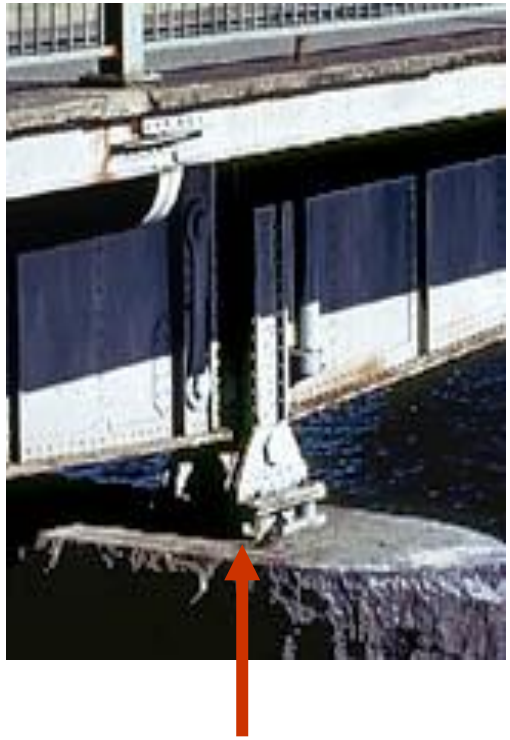
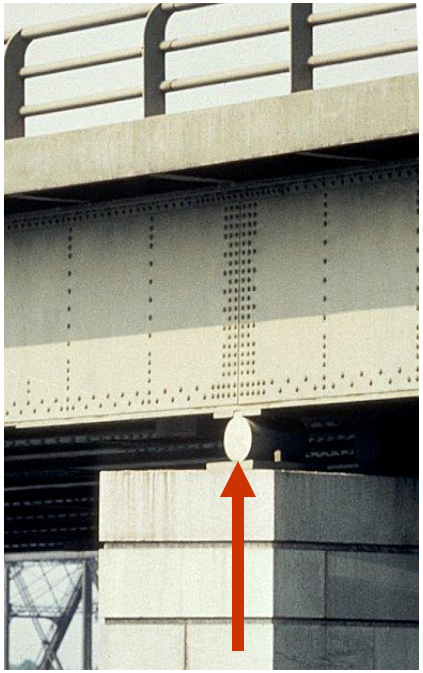


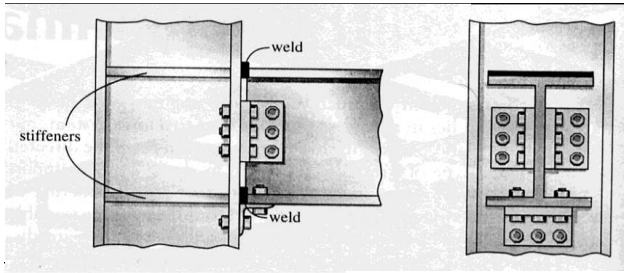


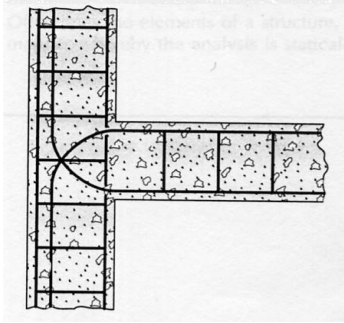


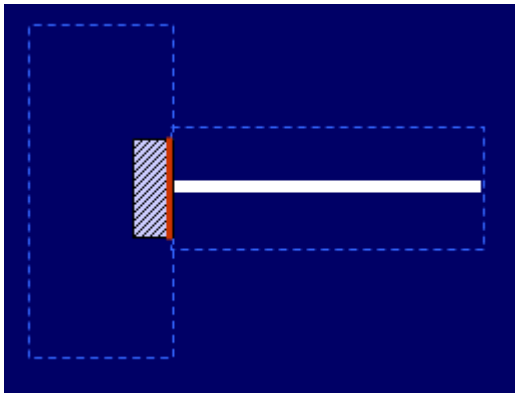


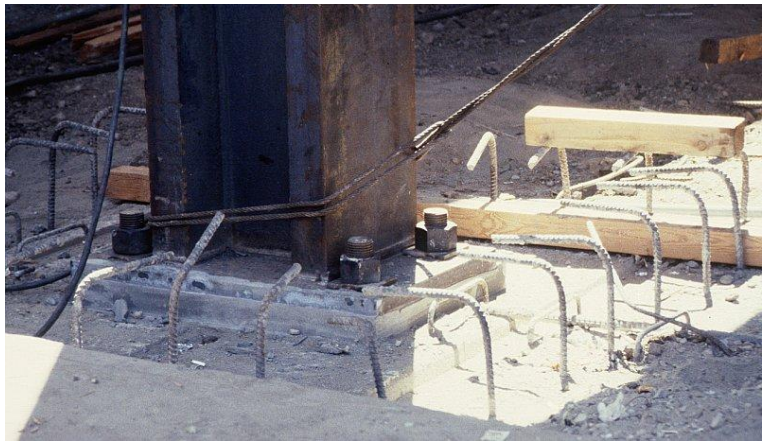


TUMPUAN JEPIT

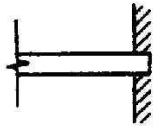
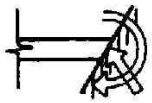
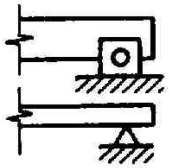
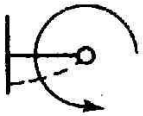
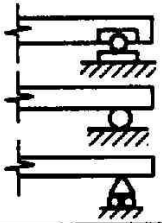
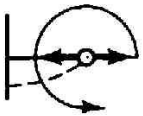
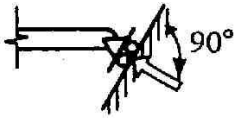
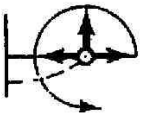
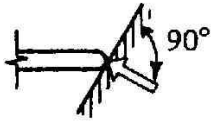
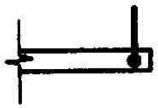
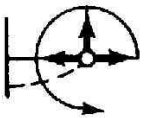
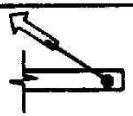








JENIS-JENIS TUMPUAN

Jenis tumpuan	Simbol	Jenis rotasi dan translasi yang dapat terjadi pada tumpuan	Jenis gaya yang dapat timbul pada tumpuan	Jenis gaya yang dapat timbul apabila tumpuannya miring
Tumpuan jepit				
Tumpuan sendi				
Tumpuan rol				
Tumpuan sederhana				
Tumpuan kabel				

PRINSIP KESETIMBANGAN STATIS

SISTEM KESETIMBANGAN GAYA-GAYA

Sebuah benda akan berada dalam keadaan diam, yaitu dalam keadaan seimbang statik, jika resultan gaya-gaya yang bekerja pada benda itu sama dengan nol.

Hal ini berarti :
jika benda tidak berpindah dalam arah tertentu (misal arah x), maka resultan gaya-gaya dalam arah x tersebut sama dengan nol.

Jadi:
Sebuah benda akan berada dalam kadaan seimbang (tidak berpindah tempat) jika resultan (jumlah) gaya-gaya dalam arah x dan dalam arah y masing-masing sama dengan nol:

$\Sigma F_x = 0$ dan $\Sigma F_y = 0$