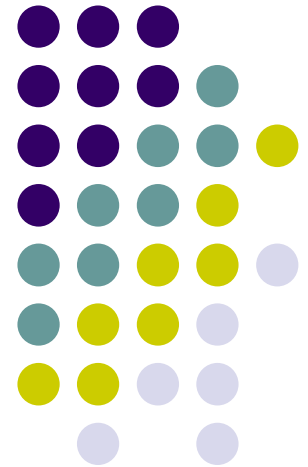


Driving Excellence with IBS

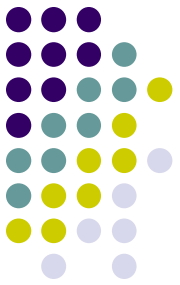
Why moves to IBS?



Kamaluddin Abdul Rashid
Senior Director
Civil and Structural Engineering Division
Headquarters of JKR Malaysia

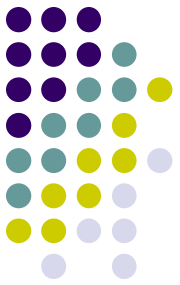
(e-mail address: arkamal@jkr.gov.my)

29 SEPTEMBER, 2016



Presentation outline

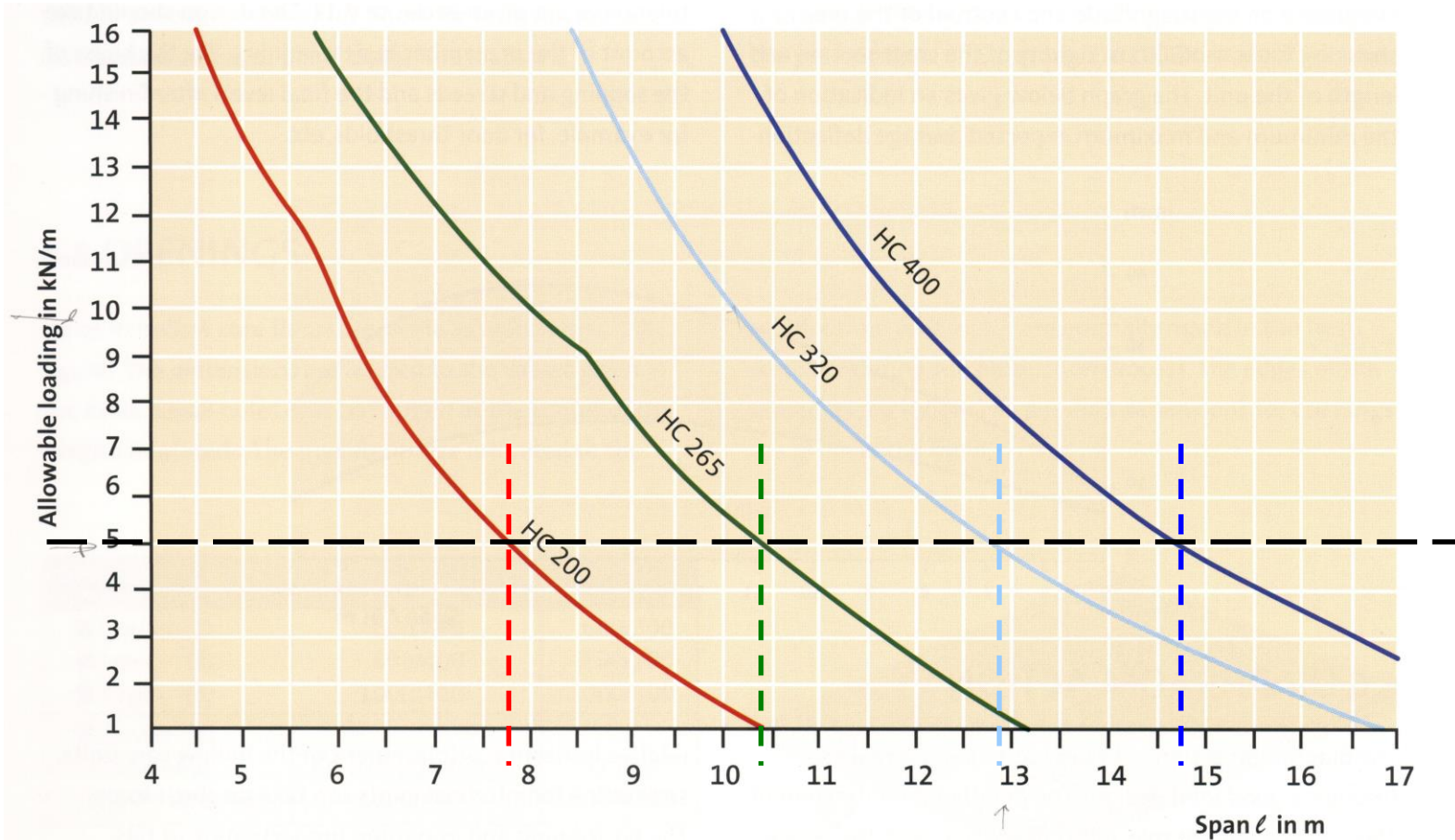
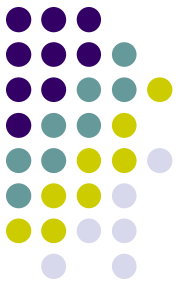
- **Value creation**
- **Creating values in structures**
- **Creating values in analysis**
- **Creating values in design**
- **Creating values in drafting**
- **Conclusions**



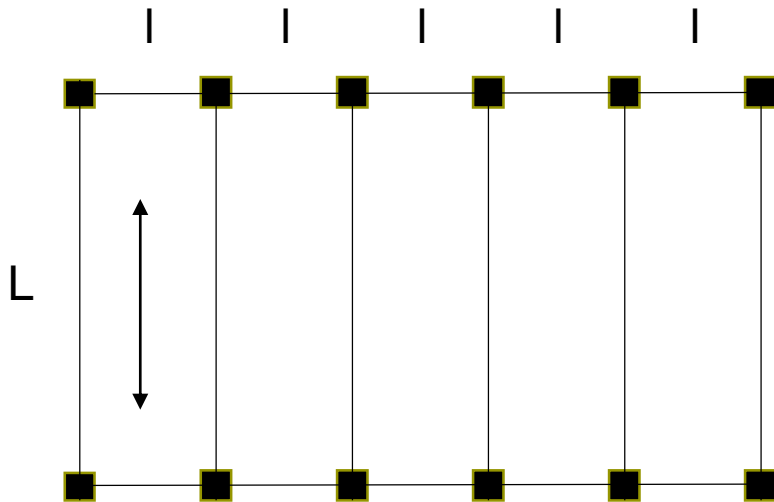
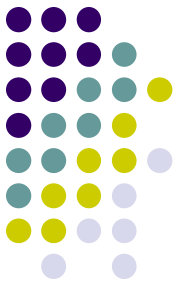
Value creation

- **Analysis: Is it easier?**
- **Design: Is it simpler?**
- **Drafting: Is it lesser?**
- **Speed: Is it faster?**
- **Quality: Is it better?**

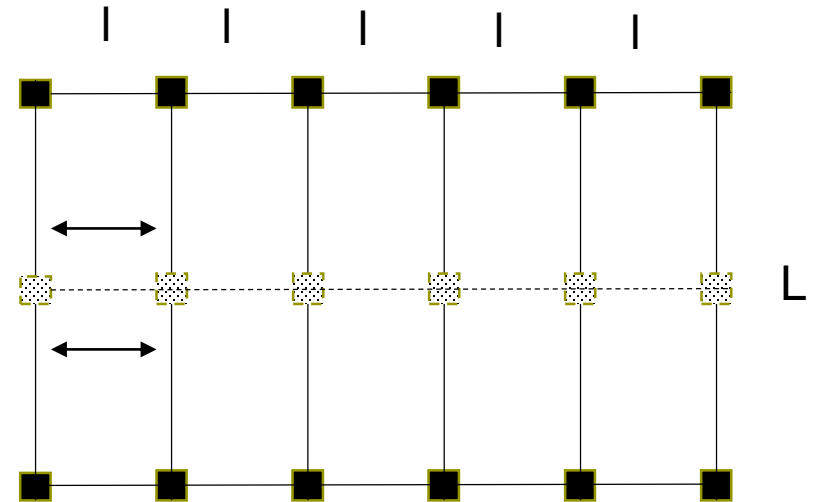
Creating value in structures



Creating value in structures



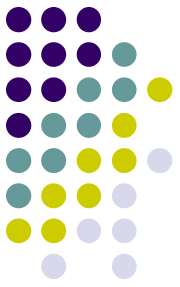
Layout for IBS



Layout for Conventional

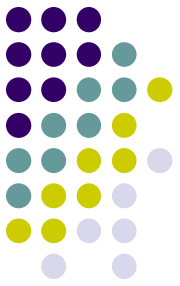
If $L = 10.0\text{m}$ and $l = 3.0\text{m}$,
then, $M = wL^2/8 = 100w/8$
or, $M = wl^2/8 = 9w/8$

Creating value in structures



Long span of precast slabs

Creating value in structures



Long span of precast slab

Creating values in analysis

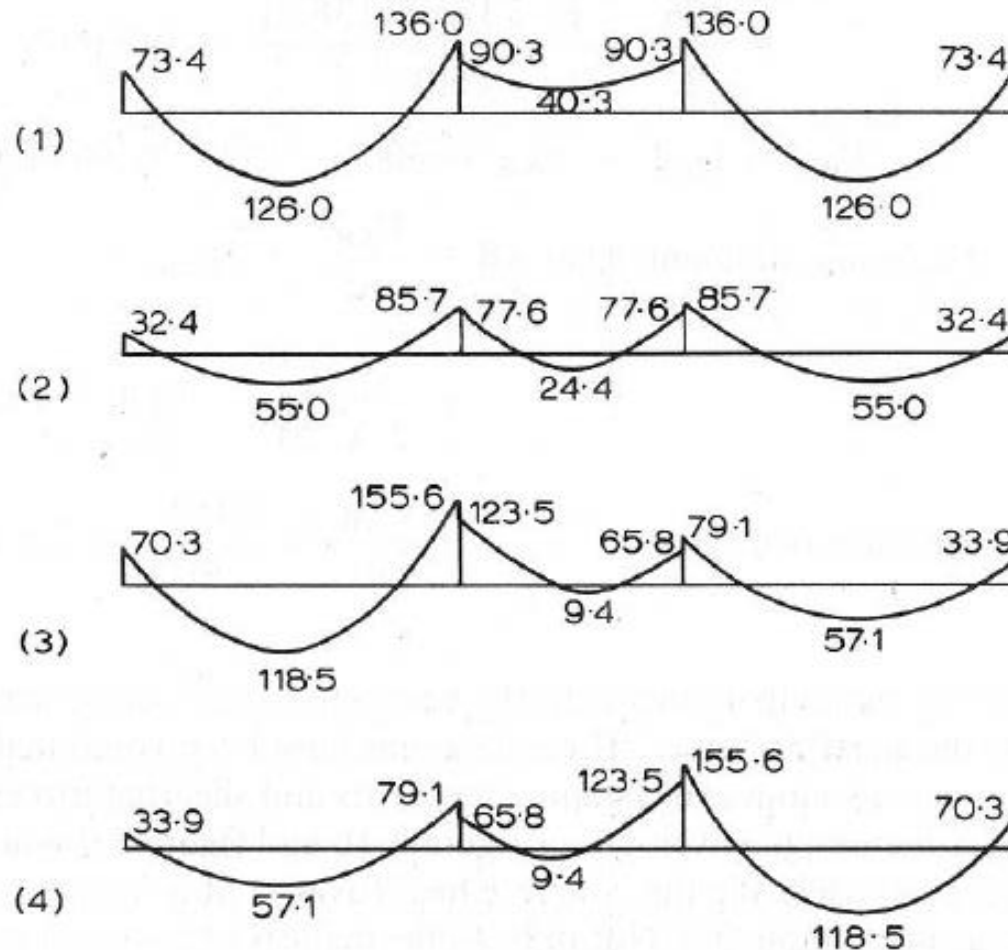
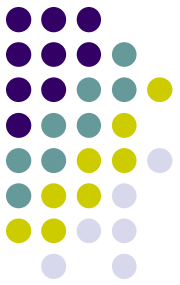
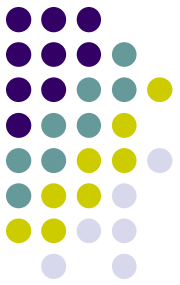


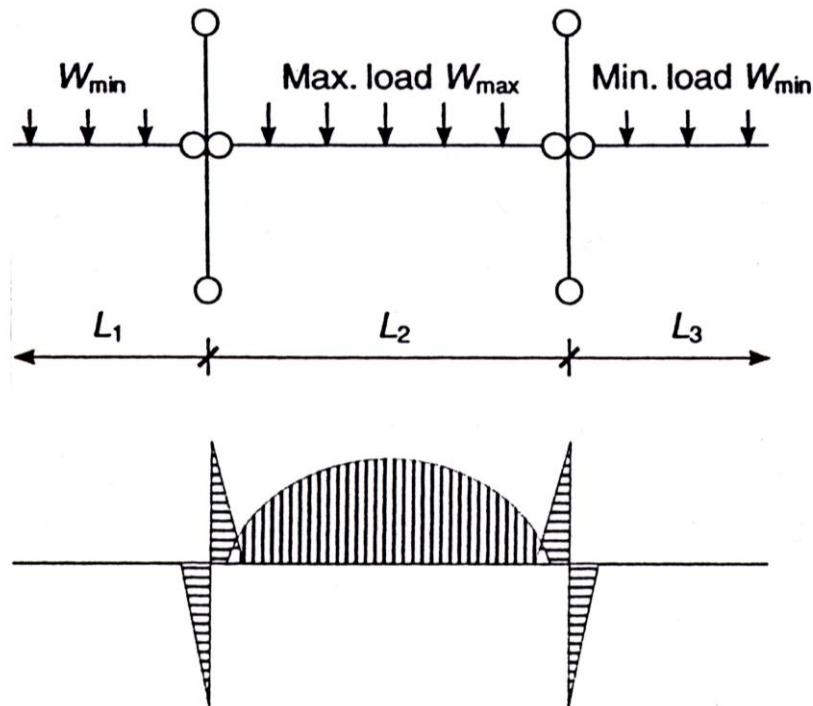
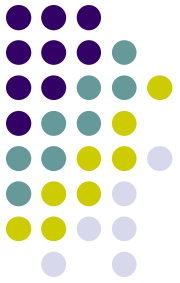
Figure 3.14 Beam bending-moment diagrams (kN m)

Creating values in analysis

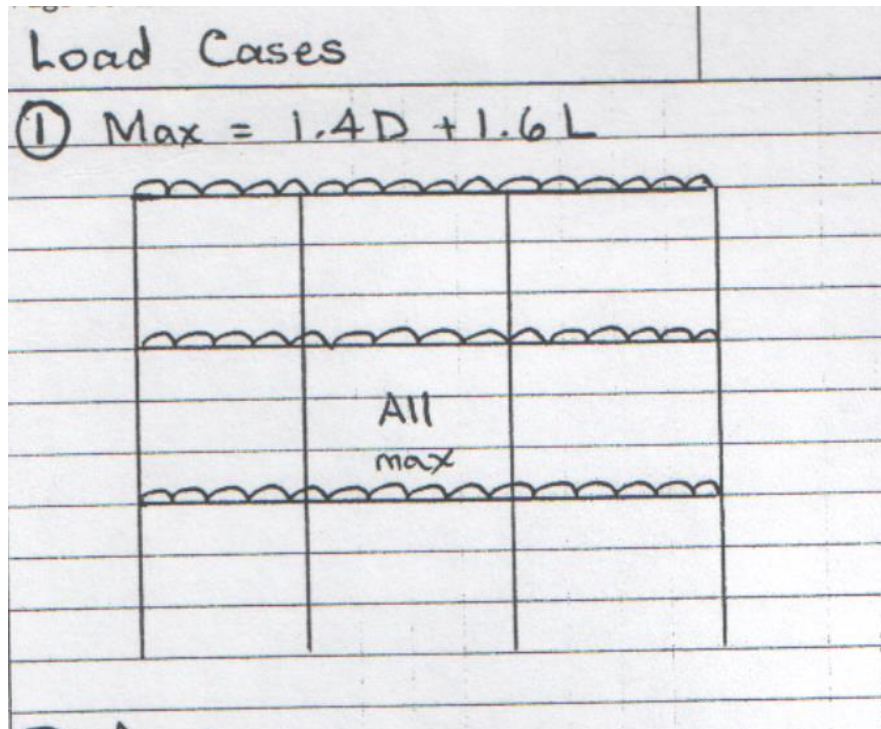
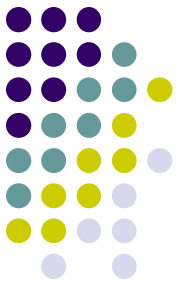


CALCULATION SHEET		Coursework ref. DI	Supervising Academic KSE	Part of Structure	
Page Contents Load Cases		Drawing Ref.	Checked by:	Date	Made by: KSE
					Date 10/01
① $\text{Max} = 1.4D + 1.6L$			② $\text{Max } 1.4D + 1.6L, \text{Min } 1.0D$		
③ As 2			④ $1.2D + 1.2L + 1.2W$		
⑤ $1.4W, 1.0D$			⑥ $1.4W, 1.4D$		
⑦ $\text{Max } 1.4D, 1.4W, \text{Min } 1.0D$					

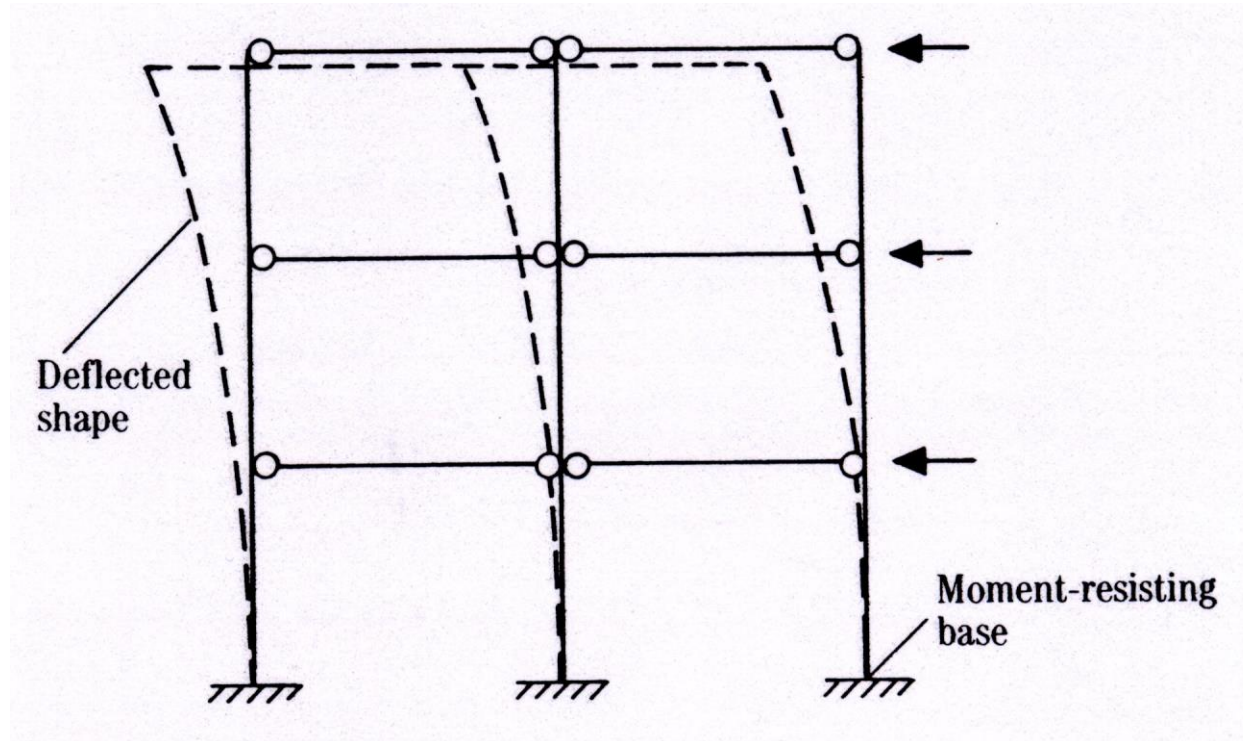
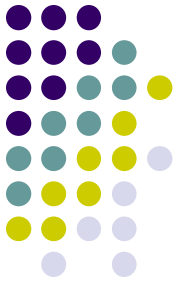
Creating values in analysis



Creating values in analysis

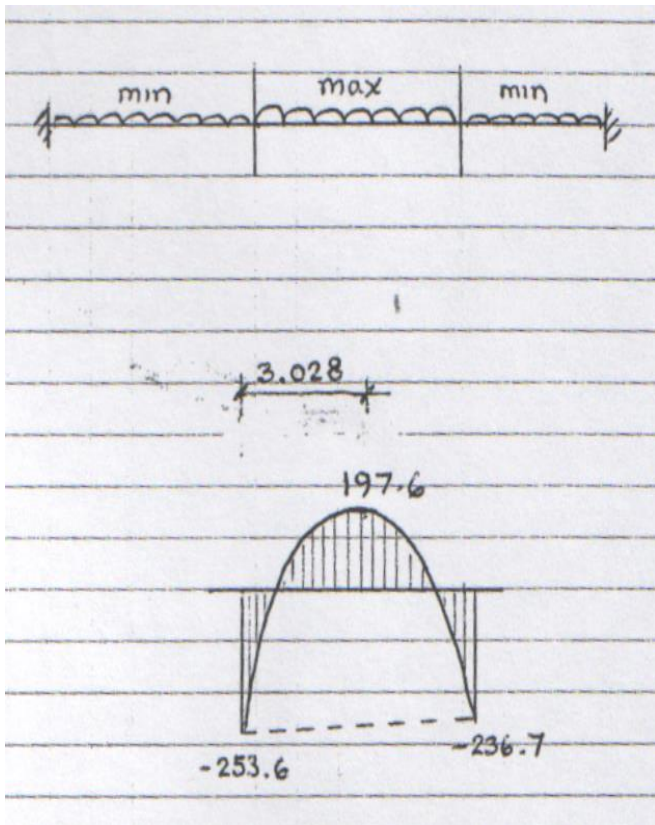
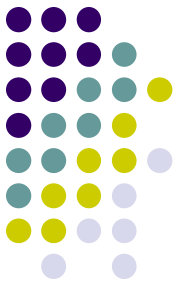


Creating values in analysis

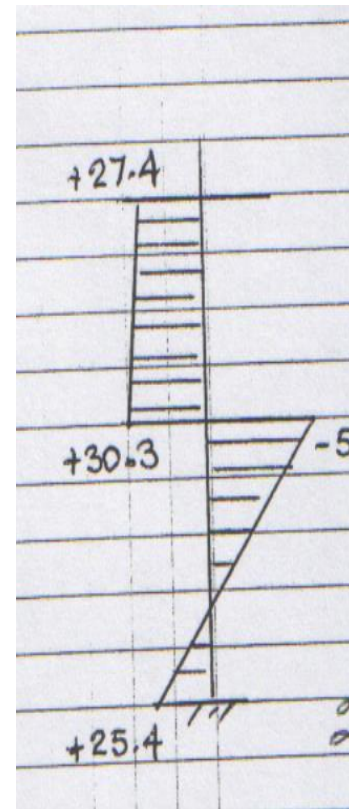


Unbraced frame

Creating values in design

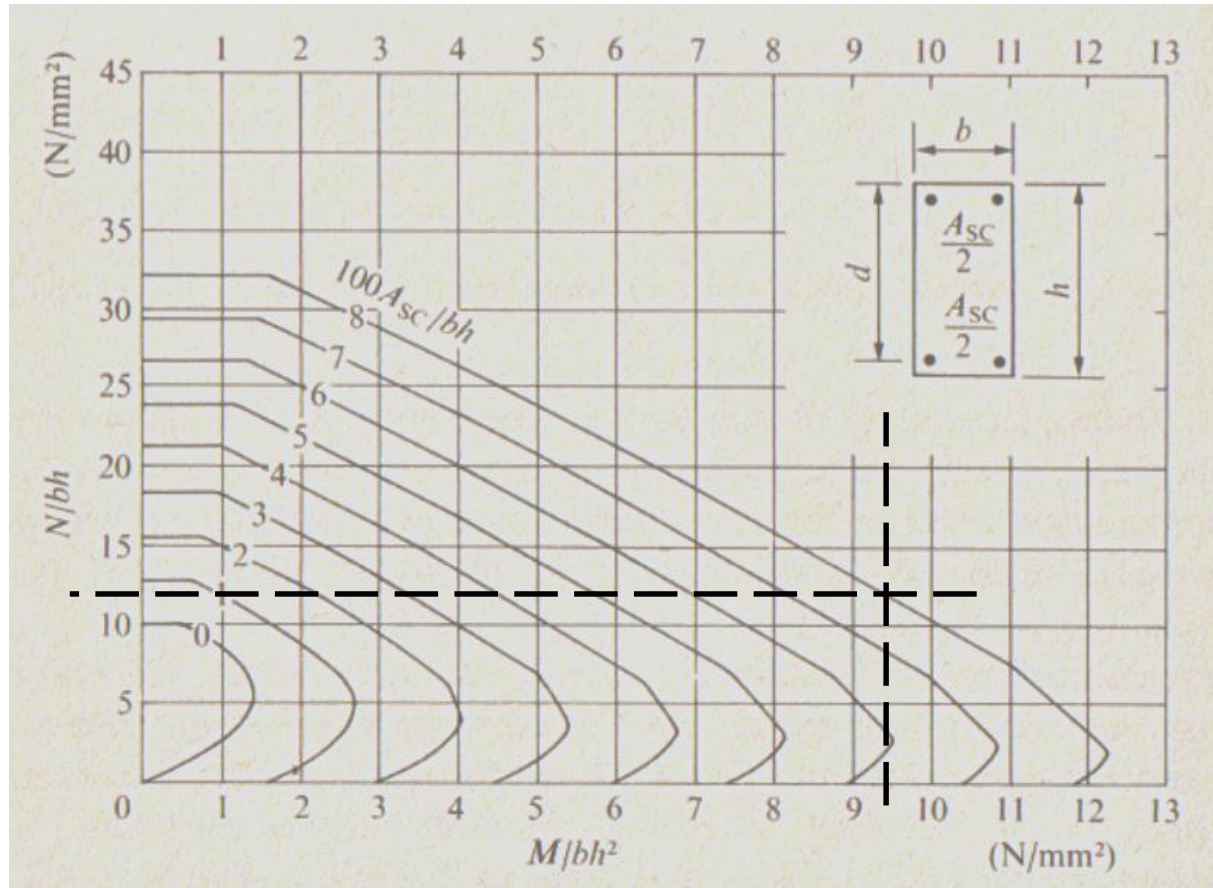
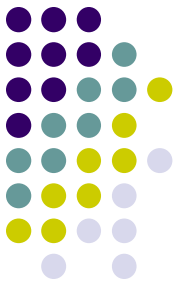


M in beams



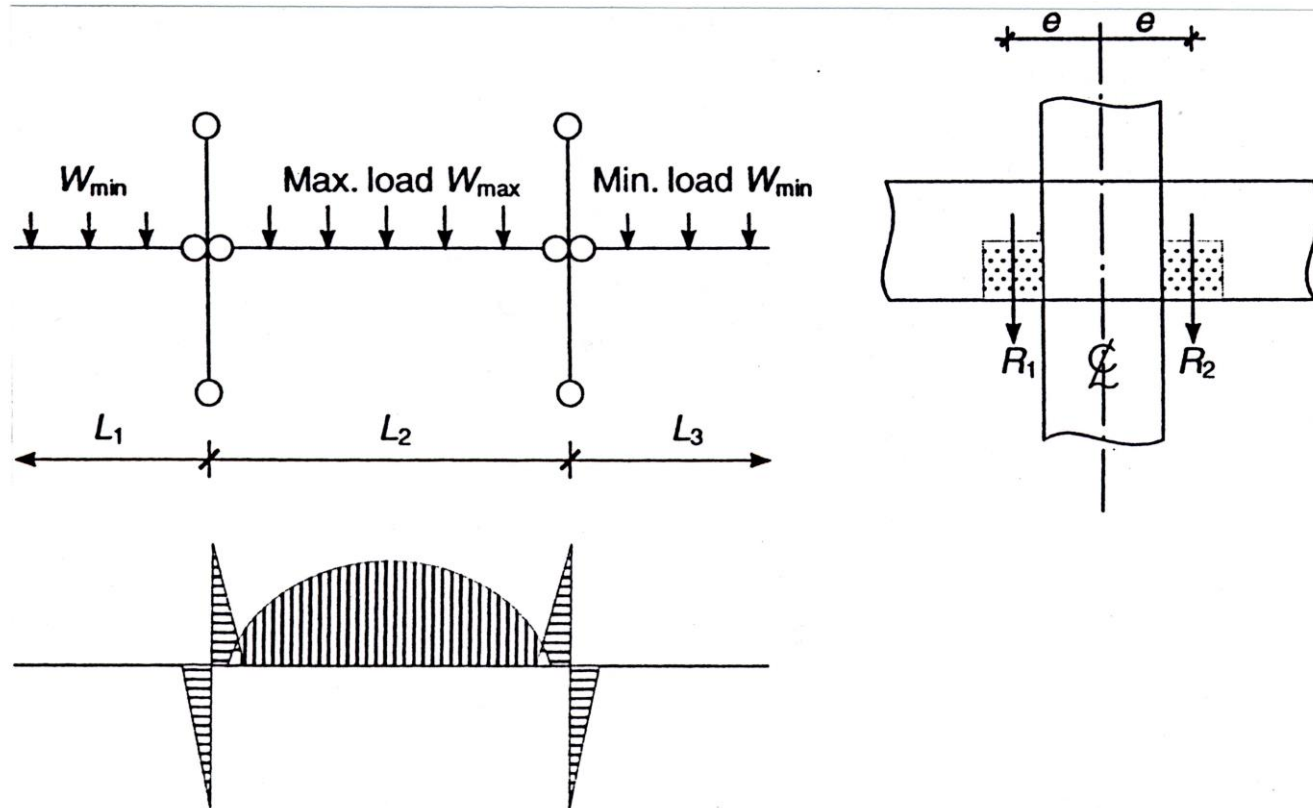
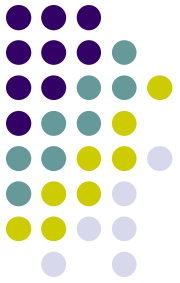
M in columns

Creating values in design

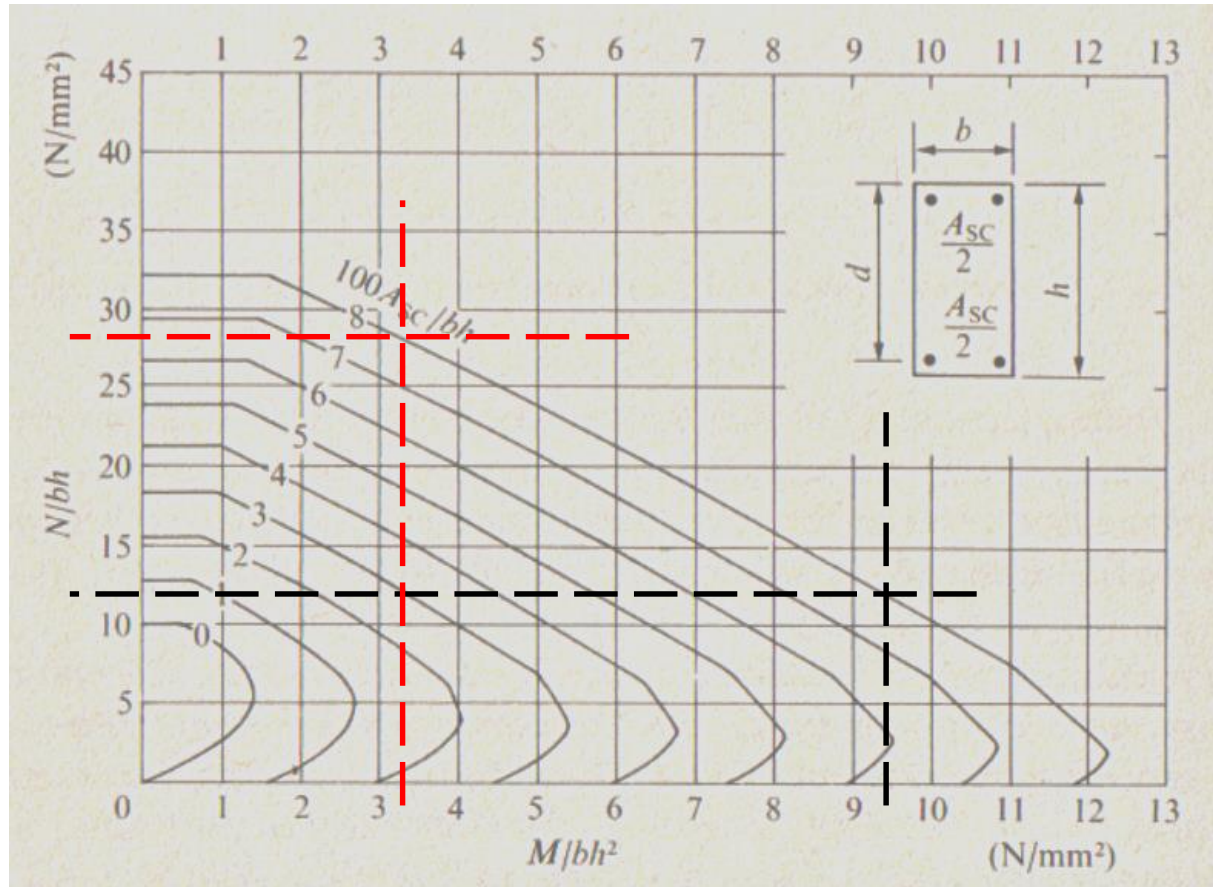
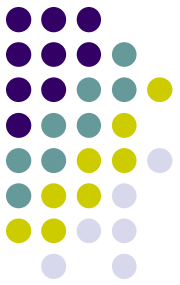


Standard design chart for column (CP 110:1972)

Creating values in design

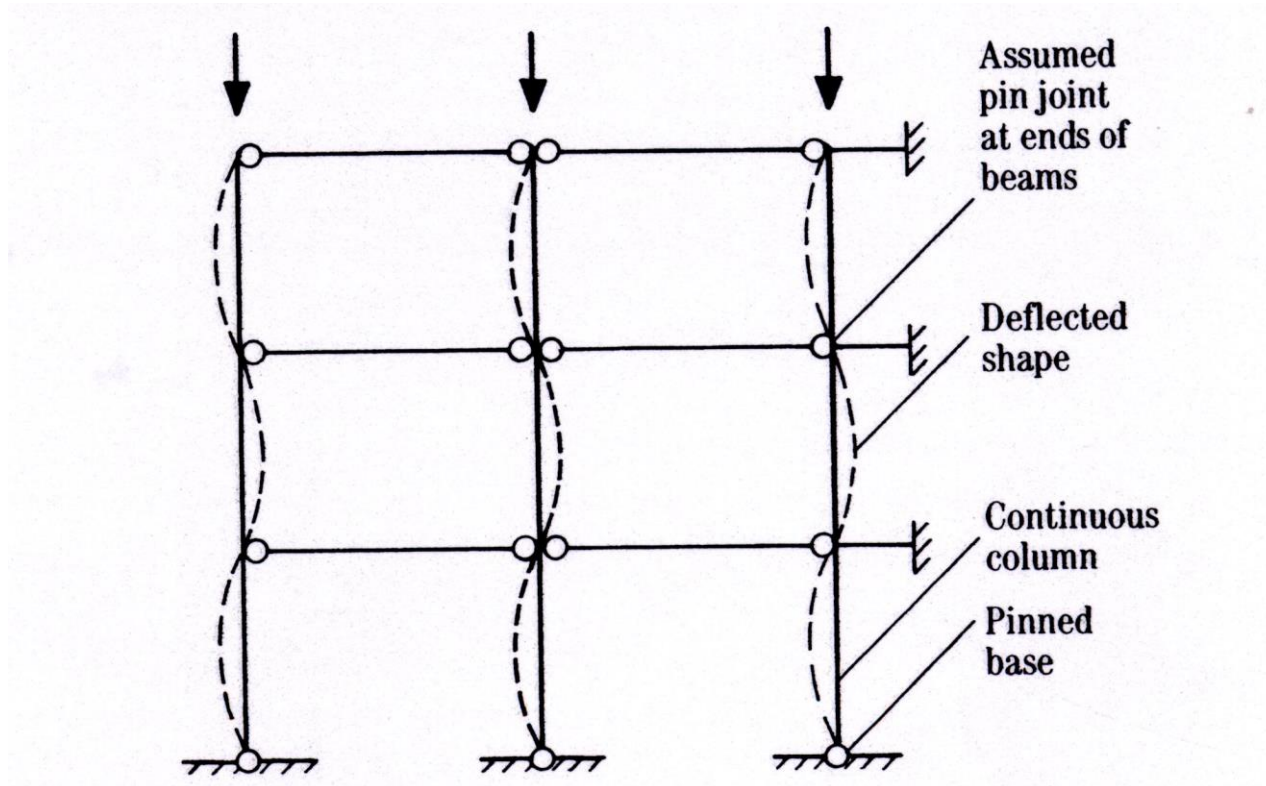
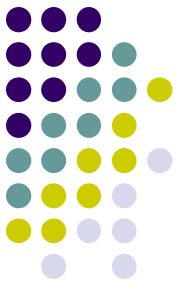


Creating values in design



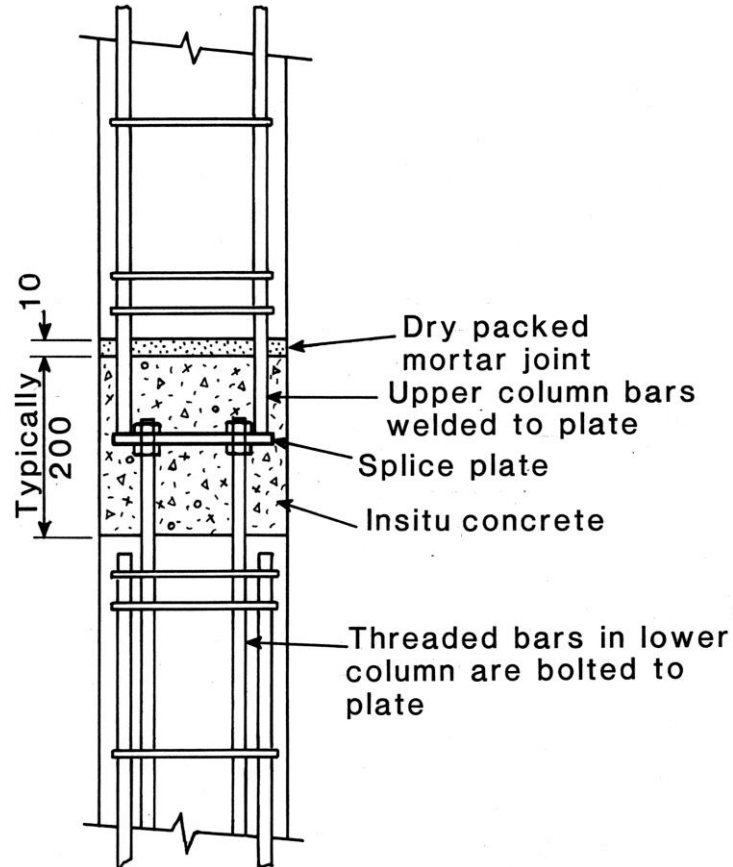
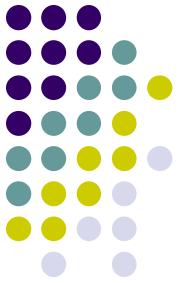
Standard design chart for column (CP 110:1972)

Creating values in design

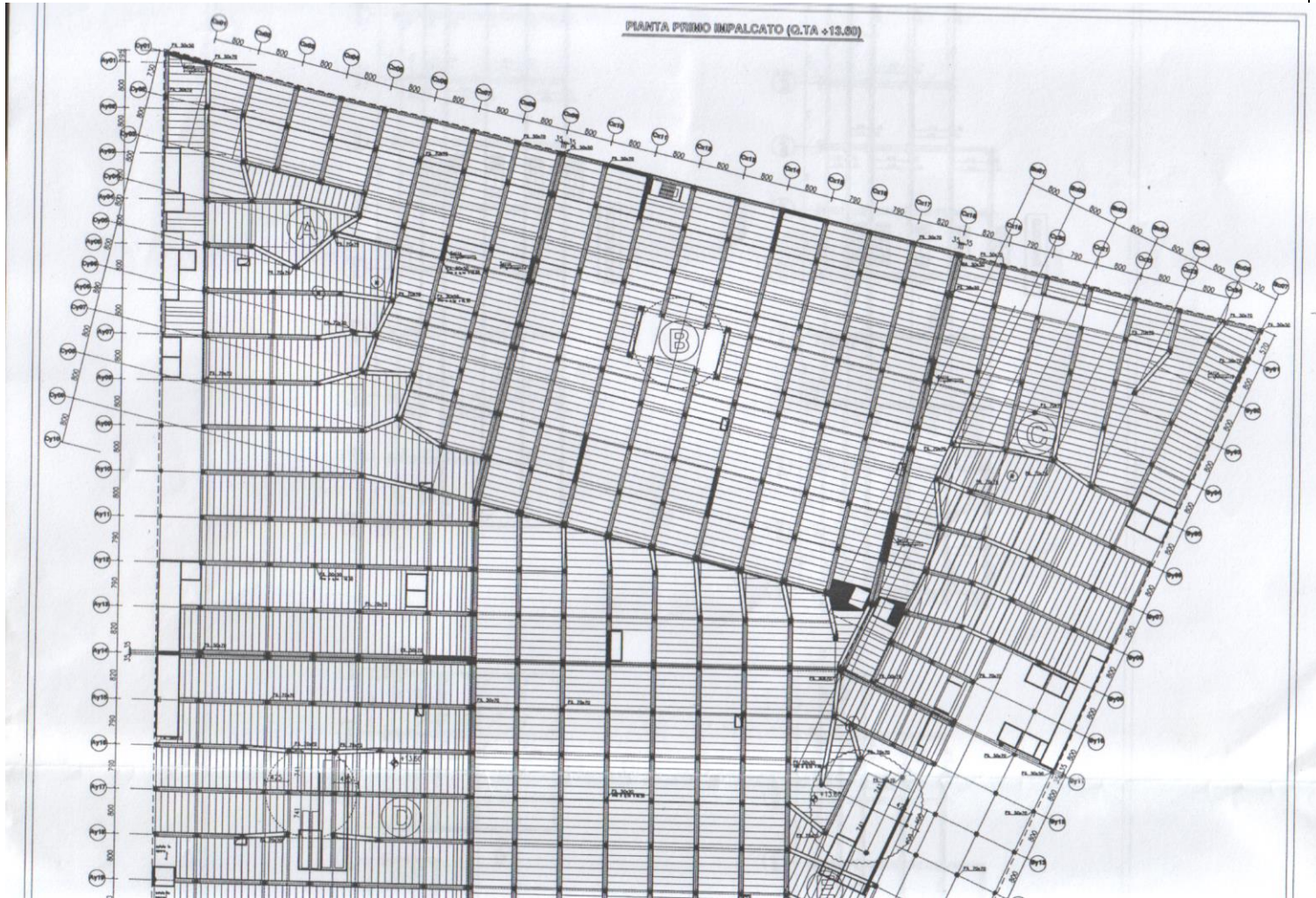
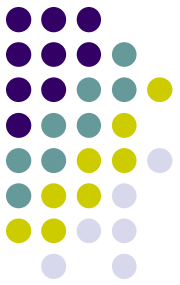


Braced frame

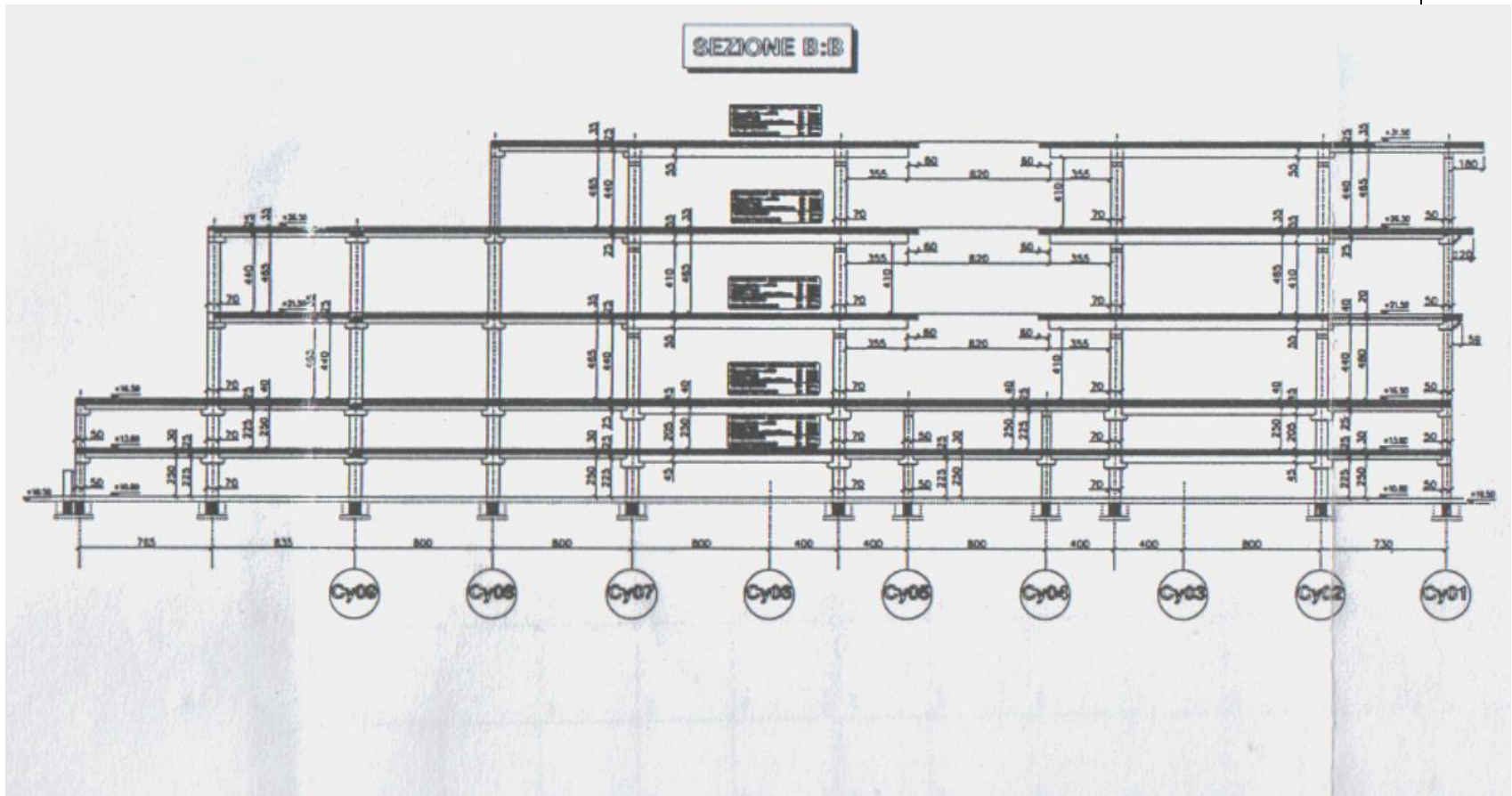
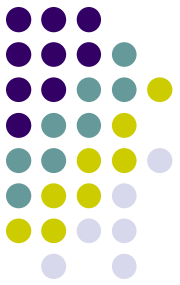
Creating values in design

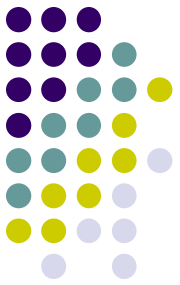


Creating values in drafting



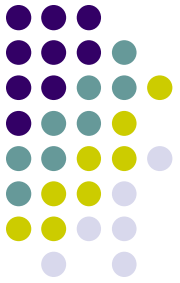
Creating values in drafting





Conclusions

- **Analysis: Is it easier?**
- **Design: Is it simpler?**
- **Drafting: Is it lesser?**
- **Speed: Is it faster?**
- **Quality: Is it better?**



Thank you

e-mail address: arkamal@jkr.gov.my