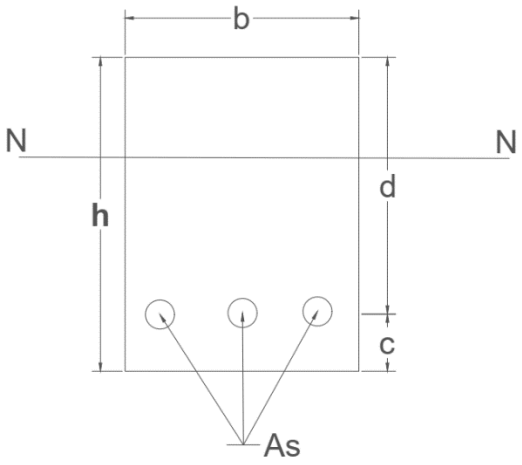
Learning Tool for Reinforced Concrete Design	Project				Job Ref.	
	Section				Sheet no./rev. 1	
	Calc.by	Date	Chk'd by	Date	App'd by	Date

DEFLECTION CALCULATION (BS8110:PART2:1997)

Reference	Calculations	Remarks
	 $f_{cu} =$ $f_y =$ $E_s =$ $A_s =$ $b =$ $h =$ $c =$ $l =$ M=	
Clauses 3.6 Eq. 8	**STEP 1** Calculate the curvature for uncracked section. $\frac{1}{r_b} = \frac{M}{E_C I}$	$\frac{1}{r_b} =$
	STEP 2 Calculate the neutral axis depth of the cracked section $x = \frac{-\alpha_e A_s \pm \sqrt{(\alpha_e A_s)^2 + 2b\alpha_e A_s d}}{b}$	$x =$

Learning Tool for Reinforced Concrete Design	Project				Job Ref.	
	Section				Sheet no./rev. 2	
	Calc.by	Date	Chk'd by	Date	App'd by	Date

Reference	Calculations	Remarks
Clauses 3.6 Eq. 7 Figure 3.1	**STEP 3** Calculate the design service stress at steel f_s $f_s = \frac{M}{\left(d - \frac{x}{3}\right) A_S}$	$f_s =$
	STEP 4 Calculate the curvature for cracked section $\frac{1}{r} = \frac{f_S}{(d - x) E_S}$	$\frac{1}{r} =$
Clauses 3.7.2 Eq. 11	**STEP 5** Calculate the Deflection $a = K l^2 \frac{1}{r_b}$	$a =$