PROJECT: CEBU 1234567
DATE: 2023-01-12

1 Design Check

This will need at least one design check for a general format of the equations, reference and set out.

1.1 Preliminary Design of Members

Will start with the same member sizes as Aurecon (for both 9m and 10m EBFs). Ductility, $\mu = 5.75$.

Member	Designation	Category	λ_e
Active Link	360UB57	1	25
Collector Beam	360UB57	2	30
Column	310UC137	2	30
Brace	250UC73	3A	40

1.1.1 Active Links (360UB57)

From NZS3404; link length:

$$e \leqslant 1.6 M_s / V_v \qquad \text{(Cl 5.12.1.2)}$$

$M_s = 303\text{kN (Capacity Tables)}$

$V_v = 0.6 \times f_{yw} \times d \times t_w = 0.6 \times 320 \times 359 \times 8 = 551\text{kN (Cl 6.5.3)}$

$0.8\text{m} \leqslant 0.880\text{m}$

From NZS3404; link shear strength:

$$\phi V_v \geqslant V^* \qquad \text{(Cl 6.5.3)}$$

$\phi V_v = 0.9 \times V_v = 0.9 \times 551 = 496\text{kN}$
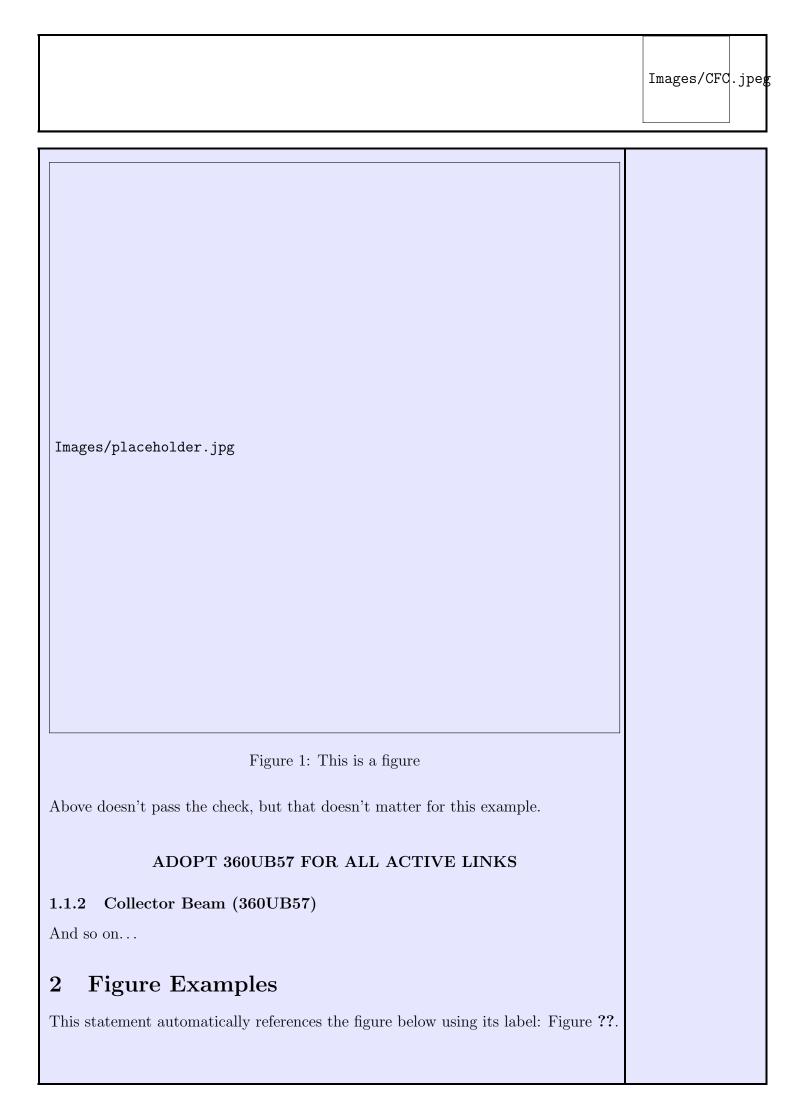
$496\text{kN} \geqslant 442\text{kN}$

From NZS3404; link web slenderness:

$$\lambda_e \leqslant \lambda_{eq} \qquad \text{(Cl 12.8.3)}$$

$\lambda_{e1} = 10000000 \text{ (page 1)}$

$\lambda_e = d_1 / t_w = 338\text{mm}/8\text{mm}=999$

$'20' \nleqslant 25$

2

Images/CFC.jpeg

Images/placeholder.jpg

Figure 1: This is a figure

Above doesn't pass the check, but that doesn't matter for this example.

ADOPT 360UB57 FOR ALL ACTIVE LINKS

1.1.2   Collector Beam (360UB57)

And so on. . .

2   Figure Examples

This statement automatically references the figure below using its label: Figure **??**.

Images/CFC.jpeg

Images/ARR.pdf

Figure 2: This is a figure