**To:** Ryan Schultz

From: Ana

Subject: Proposed column layout.

Date: May 23, 2019

The column layout shown in figure 0 is proposed, based on a preliminary calculation of internal forces in sections A-A and B-B of the 1st floor. The objective is to achive the most similar internal forces possible in all the spans in order to have types of hollowcore deck and reinforcement in compression layer as uniform as possible.

Figures 1 to 4 show the loads considered in the simple beam model of section A-A, figs. 5 to 6 show the results of internal forces obtained in the worst case. Figs. 1 to 6 are analogous for section B-B.
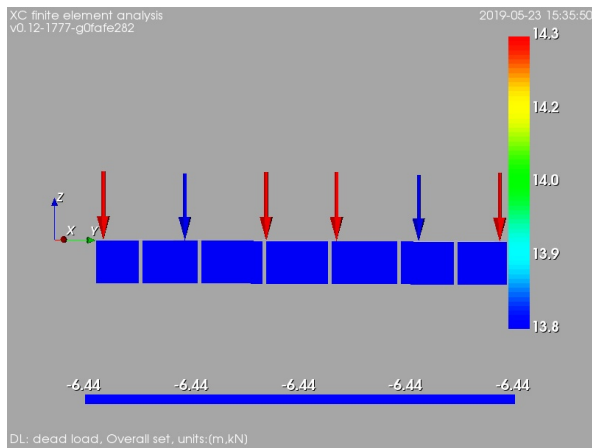
Figure 0: column layout
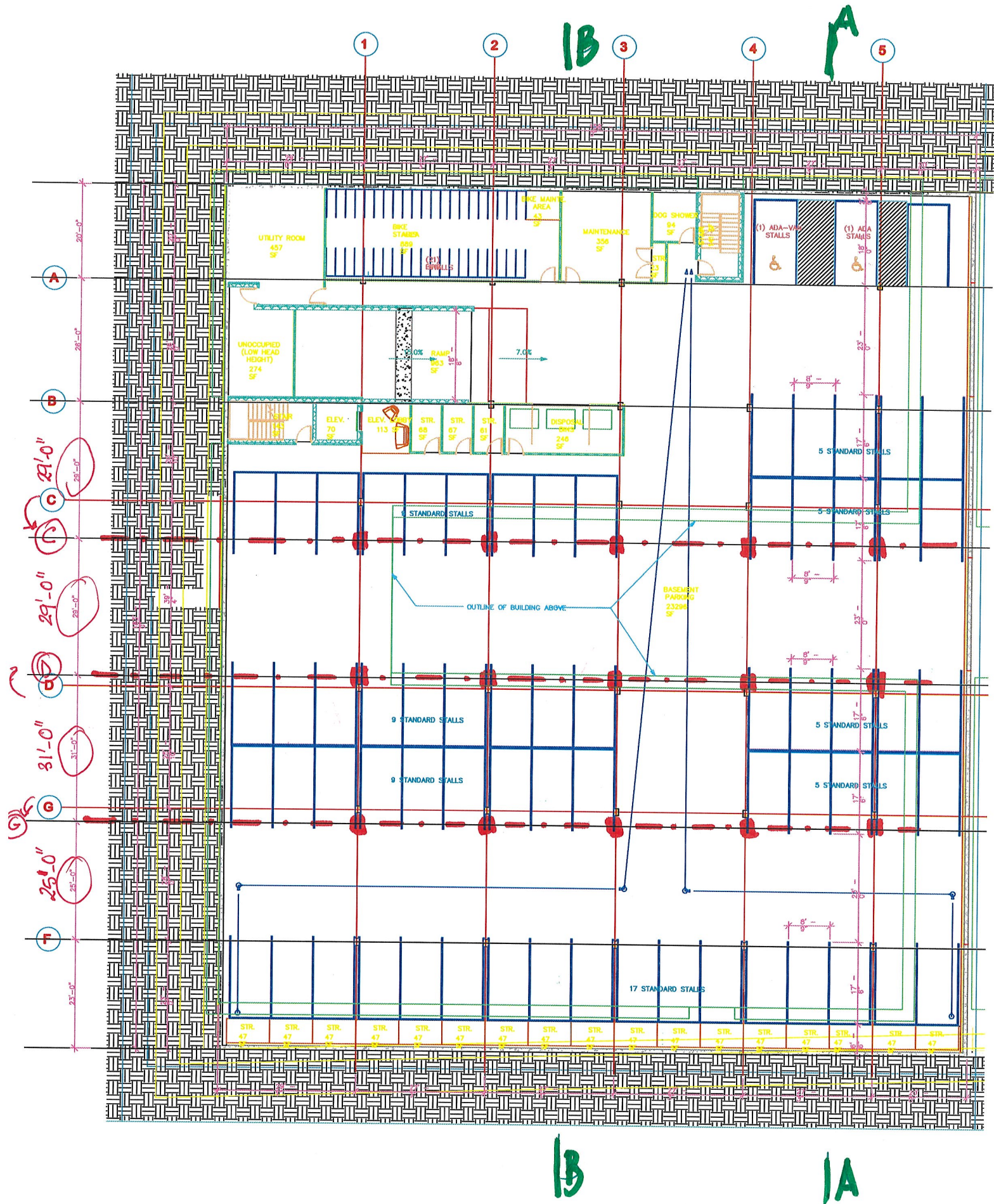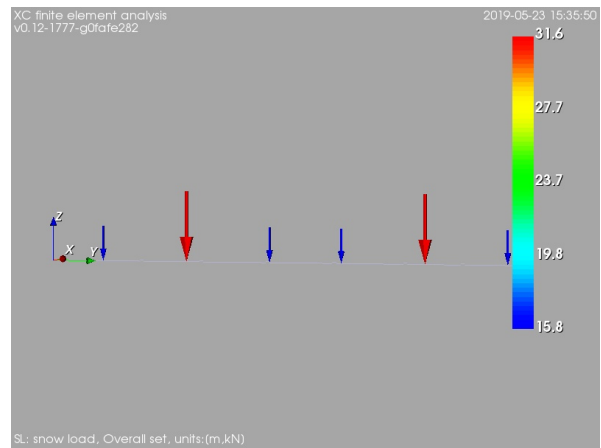
Figure 1: Sect. A-A. D: dead load
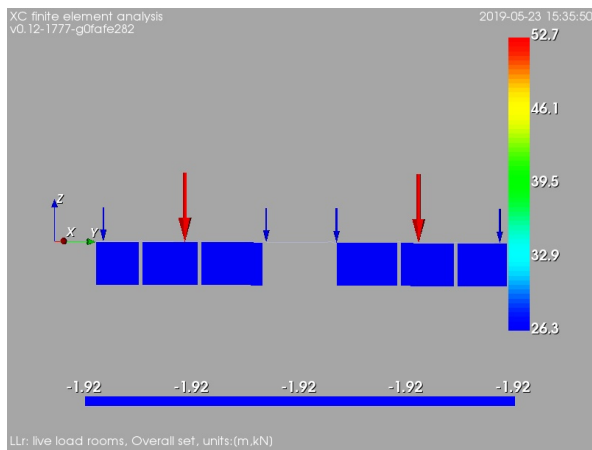

Figure 4: Sect. A-A. L_r: snow load
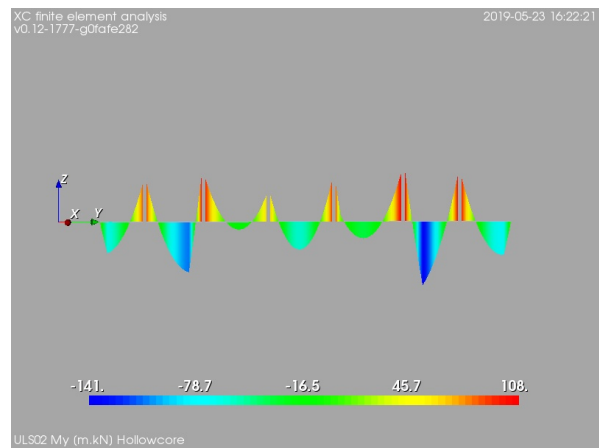

Figure 2: Sect. A-A. L_r: live load rooms

Figure 5: Sect. A-A. Maximum bending moment (ULS: 1.2*D+1.6*Lr+1.6*Lt+0.5*S)
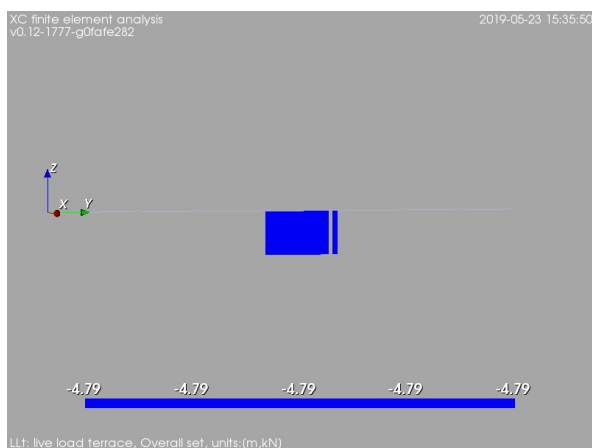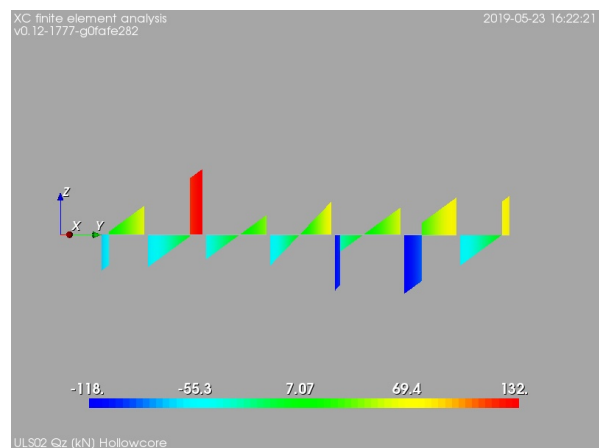

Figure 3: Sect. A-A. L_t: live load terrace

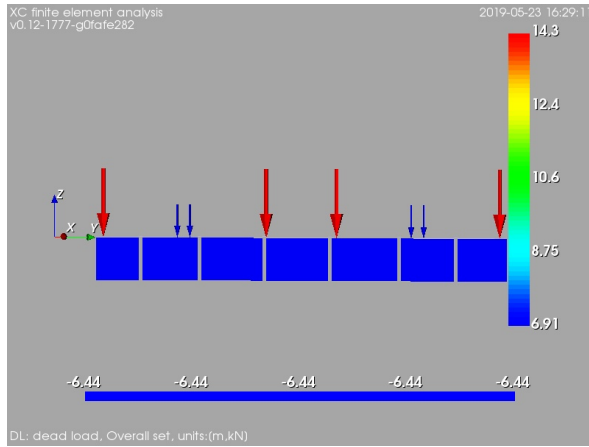Figure 6: Sect. A-A. Maximum shear force (ULS: 1.2*D+1.6*Lr+1.6*Lt+0.5*S)
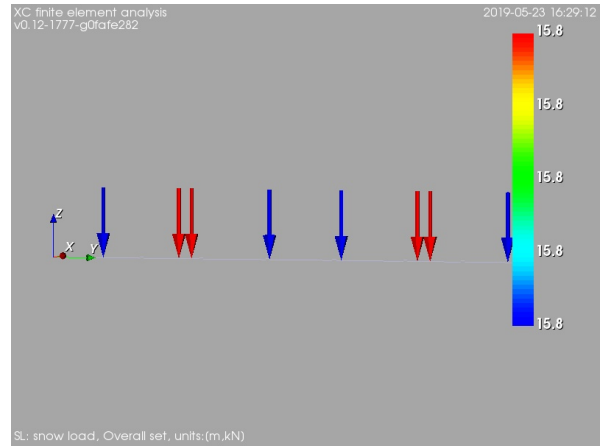
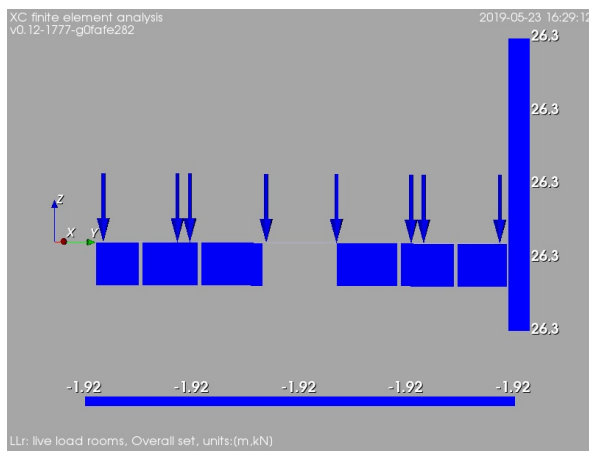Figure 7: Sect. B-B. D: dead load

Figure 8: Sect. B-B. L_r: live load rooms

Figure 9: Sect. B-B. L_t: live load terrace

Figure 10: Sect. B-B. L_r: snow load
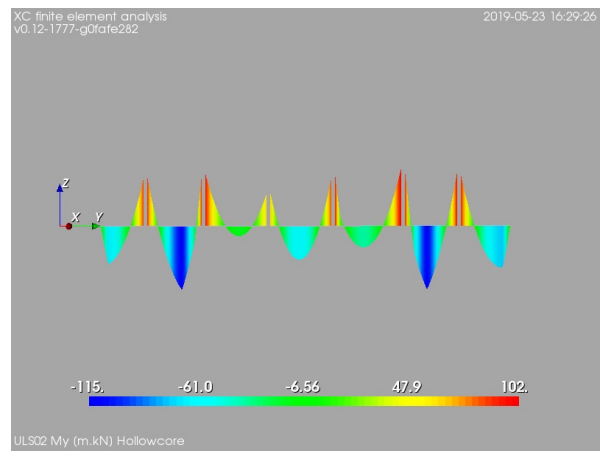
Figure 11: Sect. B-B. Maximum bending moment (ULS: 1.2*D+1.6*Lr+1.6*Lt+0.5*S)
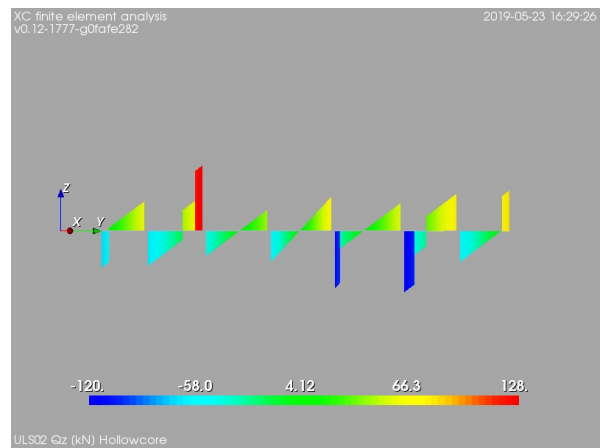
Figure 12: Sect. B-B. Maximum shear force (ULS: 1.2*D+1.6*Lr+1.6*Lt+0.5*S)