UNDER-REPRESENTED BLOCKINESS.

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1 September 2016

I've thought some more about "blockiness"-the opposite of "peakedness"- based on Burlington planning director David White's graphics at the 22 August 2016 City Council working session. (Mr. White has kindly given me his files from that presentation.) His graphic shows the least possible blockiness as viewed, which requires the most blockiness in the perpendicular direction. The difficulty arises from using 3D data on a 2D sheet.

Fig. 1 shows views of two 150 ft x 366 ft footprint buildings. Fig. 1 is schematic but it is to scale. The left building is 105 ft high; the right 160 ft. high. Here I direct attention to the 160 ft image. The problem is that the units of the horizontal and vertical directions are different The vertical shows height (units = ft) but the horizontal shows area (units = sq ft, but here normalized to % of the base area). Thus floors 1-5 have area = 100, floors 6-8 have area = 80, floors 9-12 have area = 55, and floors 13-14 have area = 27 (=100*15000sq ft/(150*366 sq ft)).

Because the vertical and horizontal units are different, the images will not necessarily depict the profile one would see. An image to convey the profile should have units of length in both directions. In Fig. 1 the horizontal length is shown proportional to area. A necessary consequence of this choice is that the view from left or right would show no peaking at all. (Another way to say this is that the upper floors' footprint is assumed to have a different shape than the ground floors'). Fig. 2 reveals this. We can see that in Fig. 2 the view from the right would show peaking similar to Fig. 1, while the view from the left shows almost no peaking at all. Fig. 2 may be the final form, in which a best (least blocky) view from one direction requires a worst (most blocky) view from the perpendicular direction. Or it may not be the final form.

In the end the actual shape will determine how blockiness is shared between perpendicular views. In a proportional depiction, in which the higher layers have the same shape as the ground floors, the length would vary as the square root of area for both directions, as shown in Table 1.

The proportional case is indicated by red lines in Fig. 3 It is considerably more blocky than the best case shown in Mr. White's graphic.

And to repeat: the problem is trying to use area to convey length. The 3D model now at the Fletcher Free Library gets around this problem.

		HORIZONTAL LENGTH			
Floors	% of base area	As shown/implied in Fig. 1		Proportional: same % reduction in both directions	
		End	Side	End	Side
13-14	27	27	100	52	52
9-12	55	55	100	74	74
6-8	80	80	100	89	89
1-5	100	100	100	100	100

Table 1. Width as % of base by floor for Fig. 1 and for proportional case.

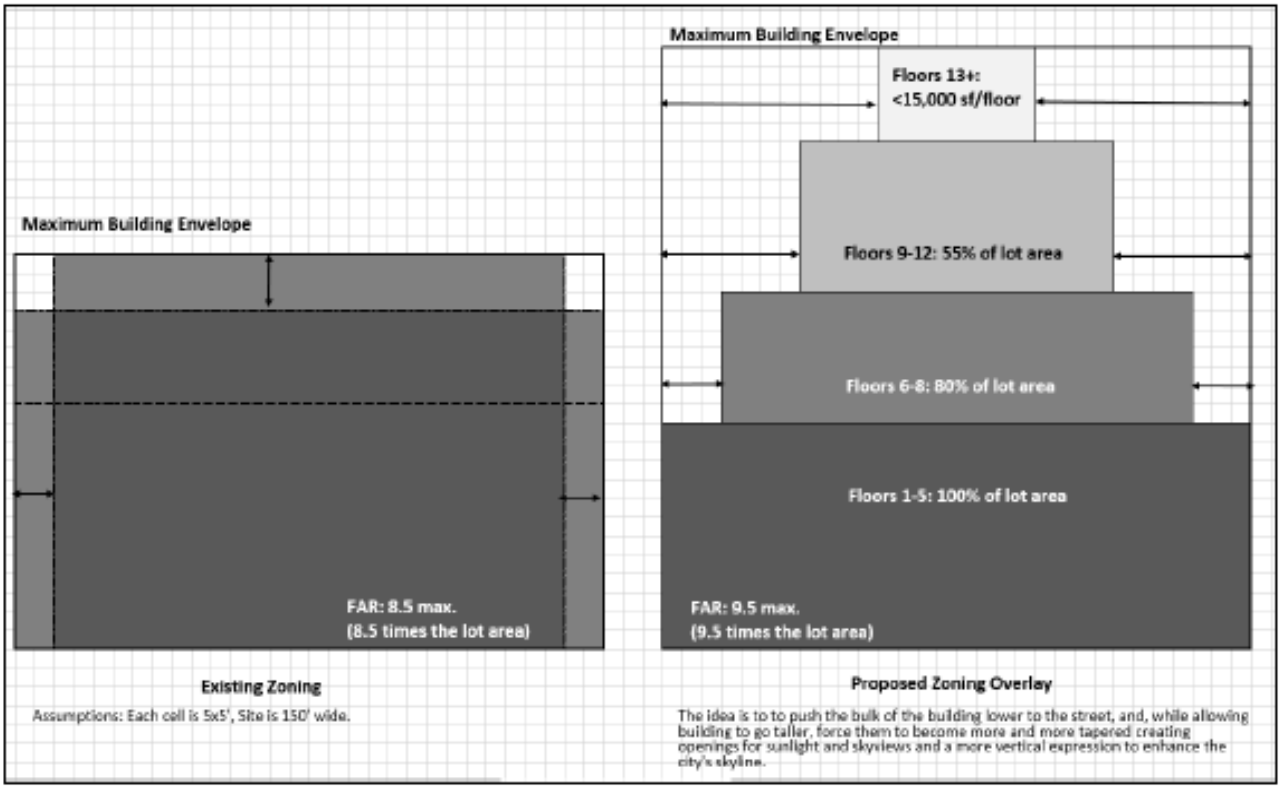

Fig. 1. Source: David White, DMUC Presentation for CC worksession 2.pdf, p. 4.

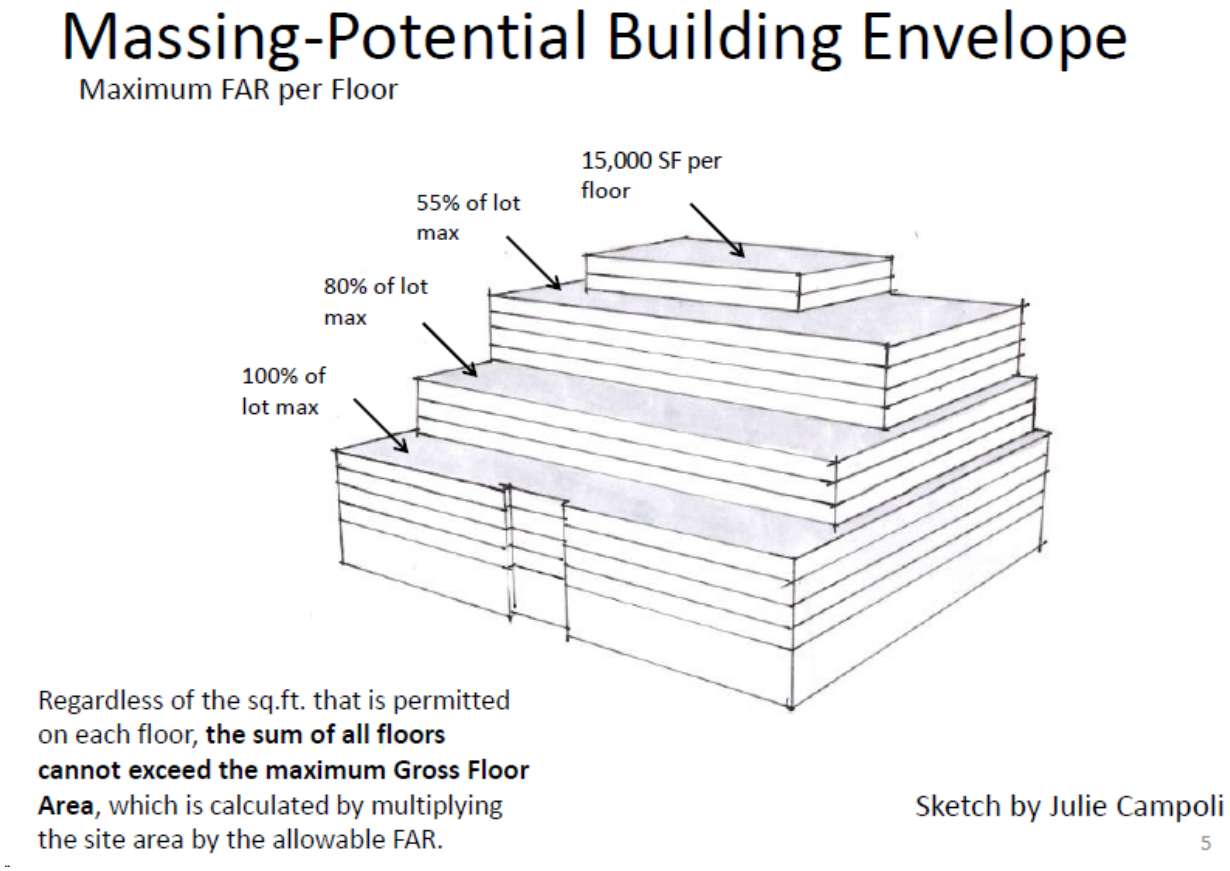

Fig. 2.Source: David White, DMUC Presentation for CC worksession 2.pdf, p. 5.

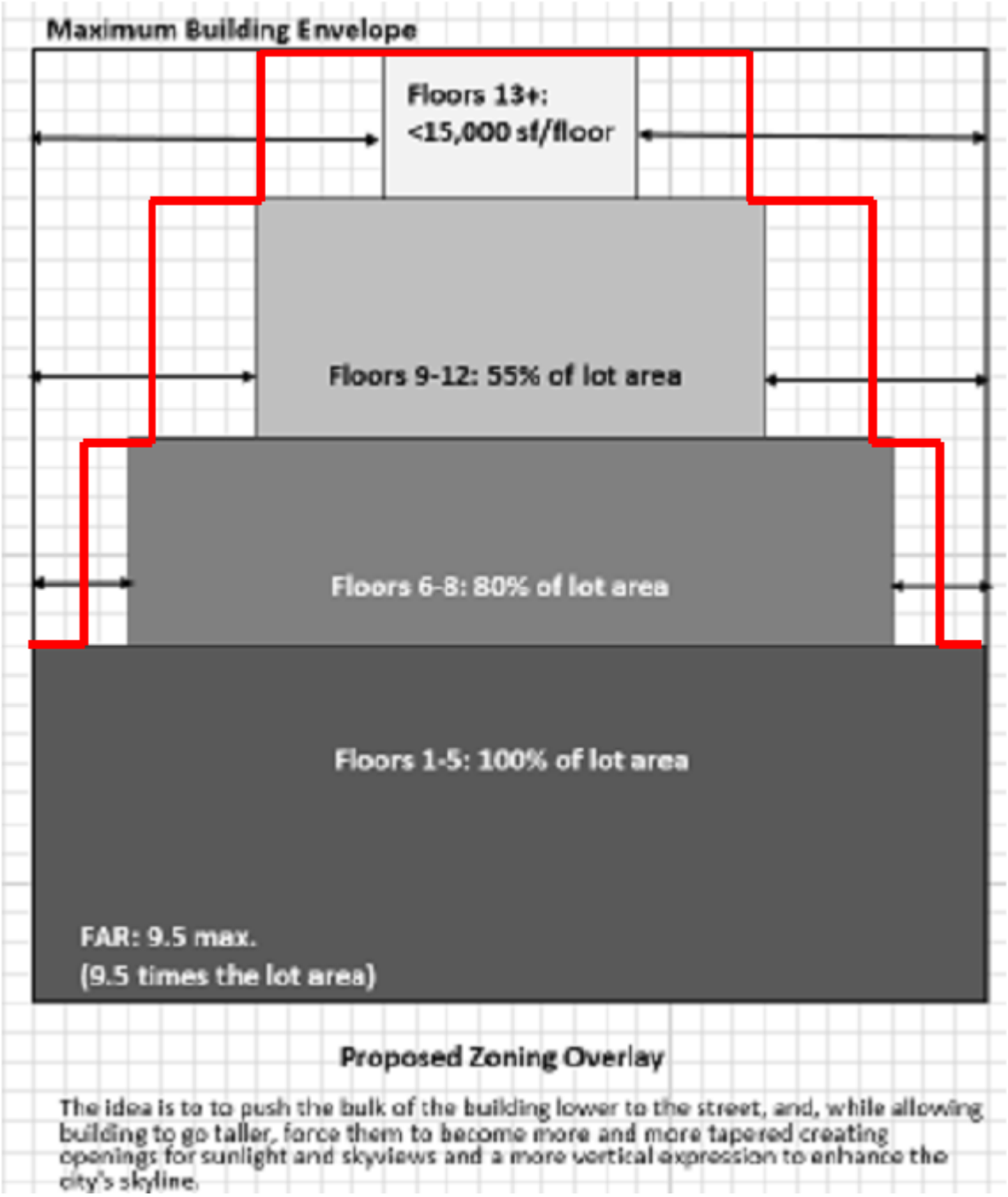

Fig. 3. Same as Fig. 1 but showing the proportional outline in red.