79. (a) Since $u = \frac{1}{2}\kappa\varepsilon_0 E^2$, $E_{\rm slab} = E_{\rm air}/\kappa_{\rm slab}$, and $U = u\mathcal{V}$ (where $\mathcal{V} =$ volume), then the fraction of energy stored in the air gaps is

$$\begin{aligned}\frac{U_{\rm air}}{U_{\rm total}} &= \frac{E_{\rm air}^2 A(d-b)}{E_{\rm air}^2 A(d-b) + \kappa_{\rm slab} E_{\rm slab}^2 Ab} = \frac{1}{1+\kappa_{\rm slab}(E_{\rm slab}/E_{\rm air})^2[b/(d-b)]} \\ &= \frac{1}{1+(2.61)(1/2.61)^2[0.780/(1.24-0.780)]} = 0.606\ .\end{aligned}$$

(b) The fraction of energy stored in the slab is $1 - 0.606 = 0.394$.