

$$F = 92,500 \text{ N}$$

$$A = 140 \text{ m}^2$$

$$\rho = 1.29 \text{ kg/m}^3$$

$$v_1 = 0 \text{ m/s inside house}$$

Find ΔP

$$\Delta P = \frac{F}{A} = \frac{92,500 \text{ N}}{140 \text{ m}^2}$$

$$\Delta P = 661 \text{ Pa}$$

Find v_2

$$P_1 + \cancel{\rho \cdot g \cdot y_1} + \frac{1}{2} \cdot \rho \cdot v_1^2 = P_2 + \cancel{\rho \cdot g \cdot y_2} + \frac{1}{2} \cdot \rho \cdot v_2^2$$

$$P_1 + \frac{1}{2} \cdot \rho \cdot v_1^2 = P_2 + \frac{1}{2} \cdot \rho \cdot v_2^2$$

$$\text{so } P_1 - P_2 = \frac{1}{2} \cdot \rho \cdot v_2^2 - \frac{1}{2} \cdot \rho \cdot v_1^2$$

$$\Delta P = \frac{1}{2} \cdot \rho \cdot v_2^2 - 0$$

$$661 \text{ Pa} = \frac{1}{2} \cdot (1.29 \text{ kg/m}^3) \cdot v_2^2$$

$$\boxed{v_2 = 32 \text{ m/s}}$$