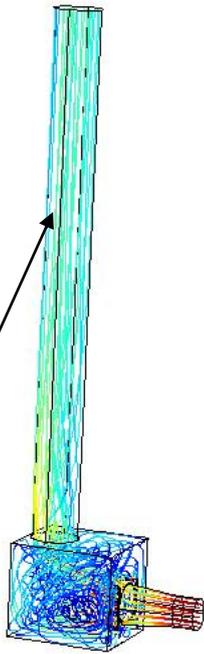Outlet, p_0 = 0 Pa

CFD

Turbulent flow, k-Ɛ
Wall = wall functions
I_T = 0.05
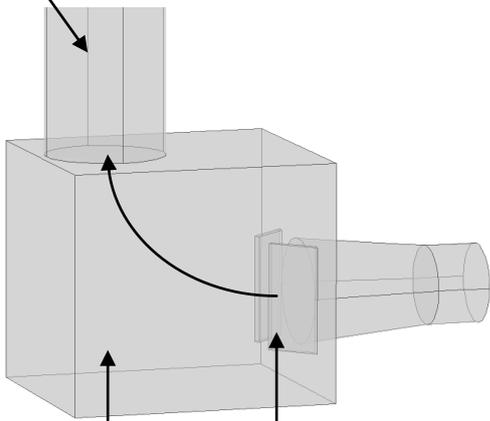L_T = inlet radius x 0.07
Normal inflow velocity = U0 22 m/s

Outlet, p_0 = 0 Pa

Inlet, v = 22 m/s

Shaft

Streamline plot of calculated air flow pattern

Doors / flaps increasing the pressure drop of the air stream

Chaimber of non-optimal shape creating turbulence and large pressure drop