The conventional design of enclosed air environments uses a trial-and-error approach that is time consuming and may not meet the design objective. Inverse design concept uses the desired enclosed air environment as the design objective and inversely determines the systems required to achieve the objective. This seminar discusses a number of backward methods (the quasi-reversibility method, pseudo-reversibility method, and regularized inverse matrix method) and forward methods (the CFD-based adjoint method, CFD-based genetic algorithm method, and proper orthogonal decomposition method) for inverse design. This seminar also discusses the possibility to reduce the computing costs of the CFD-based design methods.