Indoor air quality (IAQ) was determined in the presence of eight combinations of building materials with and without ozone. Air samples were collected in twin 30 m³ chambers to assess the C5 to C10 aldehyde content of the air while a panel of 18 to 23 human subjects assessed air quality using a continuous acceptability scale. Materials were either new carpet that was aired out for three weeks, clay plaster applied to gypsum wallboard that was aired out for up to one month, both materials, or neither. Perceived Air Quality (PAQ) assessed by the panel was most acceptable and concentrations of aldehydes were lowest when only clay plaster or both clay plaster and carpet were in the chambers without ozone. The least acceptable PAQ and the highest concentrations of aldehydes were observed when carpet and ozone were present together; addition of clay plaster for this condition improved PAQ and considerably decreased aldehyde concentrations.