

# Main issues and definitions

- ▶ Improving the glazing quality (e.g. from single to advanced glazing) is among the most energy efficient measures
- ▶ Sometimes the glazing area can be modified : e.g. reduced in a north facade, increased in a south facade
- ▶ Attention should be also paid to solar protection, and possible ventilation air inlets placed in window frames
- ▶ The three important characteristics of windows / glazing are : the heat loss factor ( $U$  in  $W/m^2/K$ ) , the light ( $\tau$ ) and solar ( $g$ ) transmittance factors
- ▶ A glazing is chosen according to the climate, orientation and exposure, in order to maximize the heat gains - losses balance

# Main recommendations

- ▶ **Keep large glazing area in living rooms (daylighting)**
- ▶ **Keep large glazing % in south facade and integrate solar protection (e.g. overhangs, external blinds)**
- ▶ **Reduce glazing area in north facades**
- ▶ **Choose low emissivity argon filled glazing (but high g-value in south facades), well insulated window frames, possibly triple glazing according to the climate**
- ▶ **If possible, compare different types of glazing using calculation (see section 2.1 and 2.2)**

# Example : Montreuil, France



**Before renovation :**  
**single glazing**  
**50% of the facades are glazed**

**After renovation :**  
**Low emissivity double**  
**Glazing, argon filled,**  
**Reduced glazing area**  
**In the north facade,**  
**Glazed balconies**

