

# Multifamily DH building

## Sample Gårdsten (SE)



Industry Forum Workshop – Raciborz, June 12, 2014

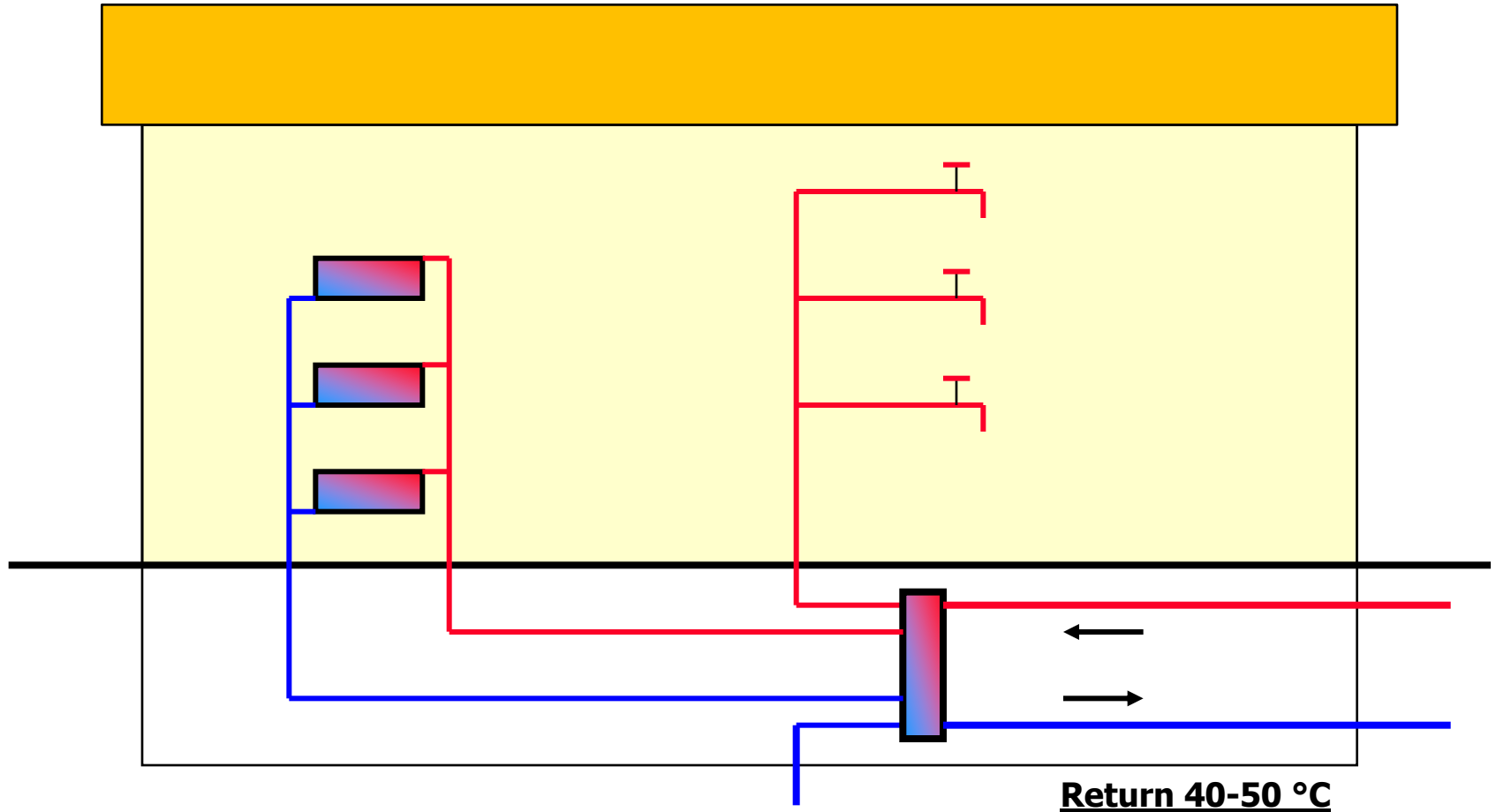
A photograph of a multi-story apartment building with a flat roof and balconies. The building has a grid-like facade with vertical and horizontal concrete or metal elements. The balconies are enclosed with glass railings. The text "Flat roof – South balconies" is overlaid on the image in a white box with blue text.

Flat roof – South balconies

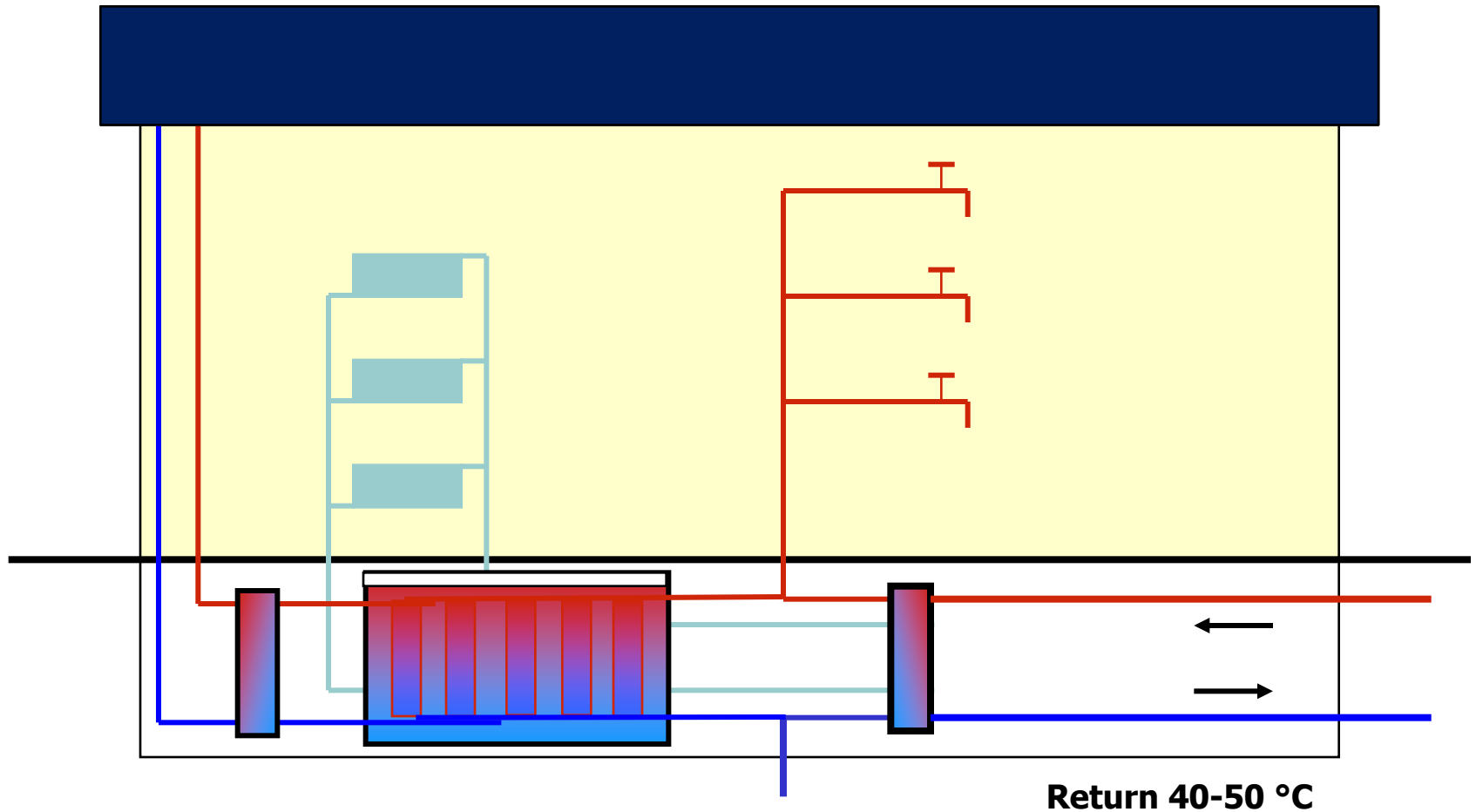
A photograph of a modern, multi-story building with a glass and metal facade. The roof is covered with a large array of dark solar panels. The building features multiple floors with balconies that have glass railings. The sky is clear and blue. In the foreground, there are some green bushes and trees.

Solar roof collectors  
Glaced balconies

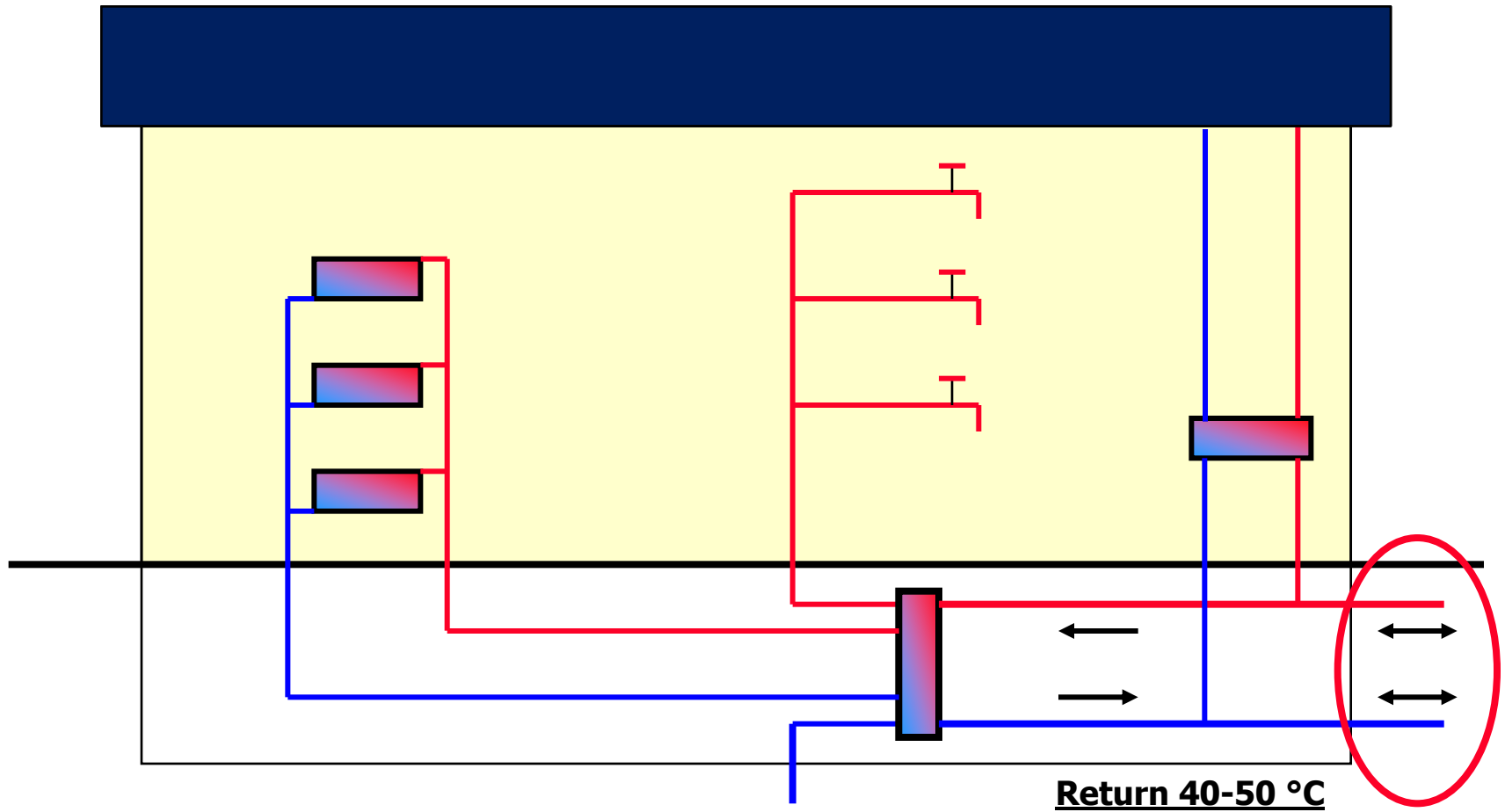
# DH - Multifamily building ..



# Solar on building side



# Solar on DH side ..





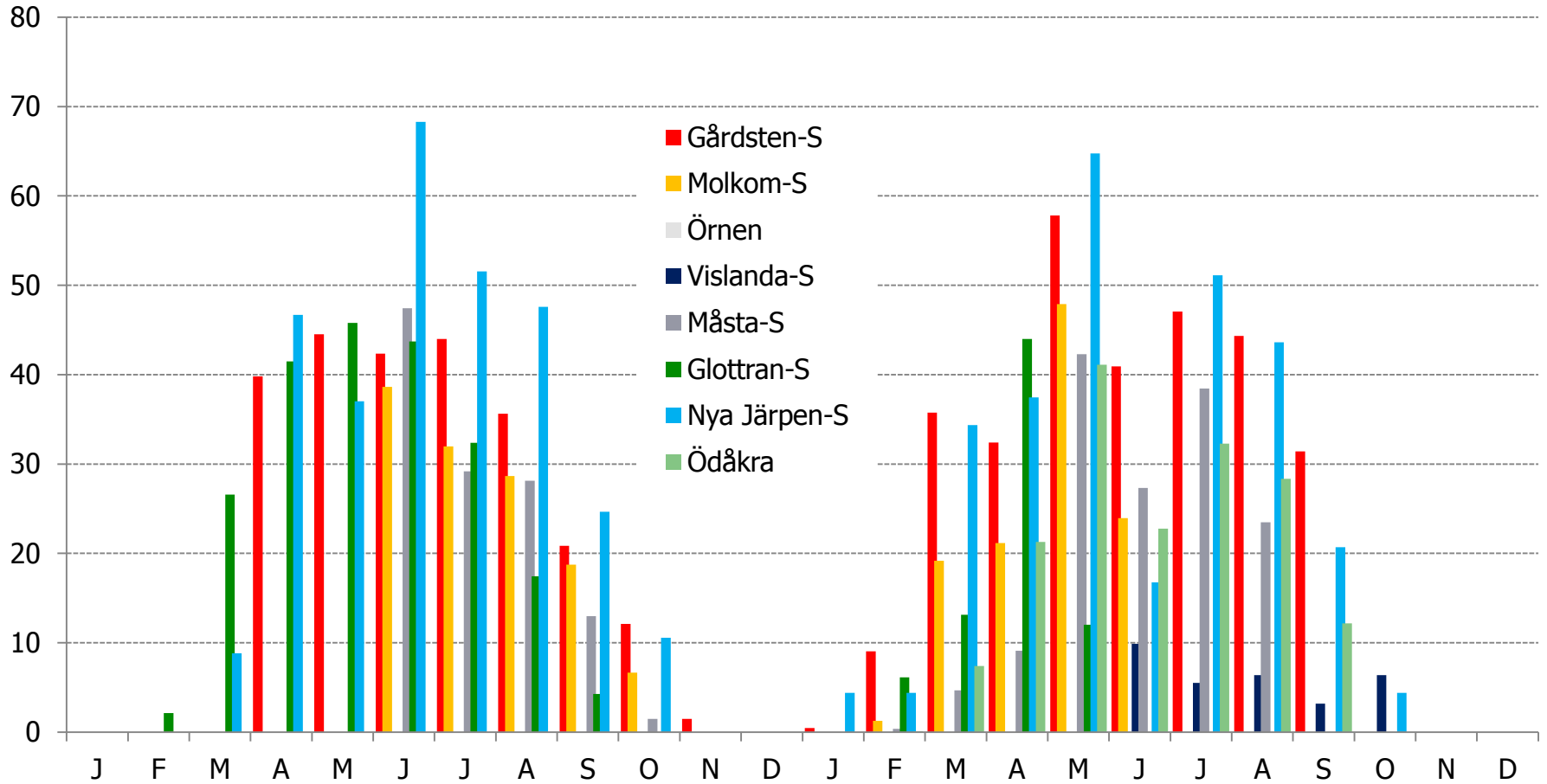
Solar collectors on supports

# Sample Prefab HX unit





Monthly yield [kWh/m<sup>2</sup>] - 2011-2012



## Solar on building side

- **Pro** - CW - Lower temperature ?
- **Pro** - Trad. control
- **Con** - Buffer storage ( $<100$  l/m<sup>2</sup>)
- **Con** - Design for DHW-load

## Solar on DH side

- **Con** - DH - Higher temperature
- **Con** - More advanced control
- **Pro** - No buffer storage
- **Pro** - Design for roof (pipe) ..
- **Con/Pro** - Agreement ..

## More info ..

- **SDH project**  
[www.solar-district-heating.eu](http://www.solar-district-heating.eu)
- **Jan-Olof Dalenbäck**  
[jan-olof.dalenback@chalmers.se](mailto:jan-olof.dalenback@chalmers.se)