

Impact of building energetics on urban climate

ROBERT SCHOETTER , METEO FRANCE, CNRM-GAME

MAYA MILLIEZ, EDF R&D , ENERBAT DEPARTMENT



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Impact of building energy demand on urban climate

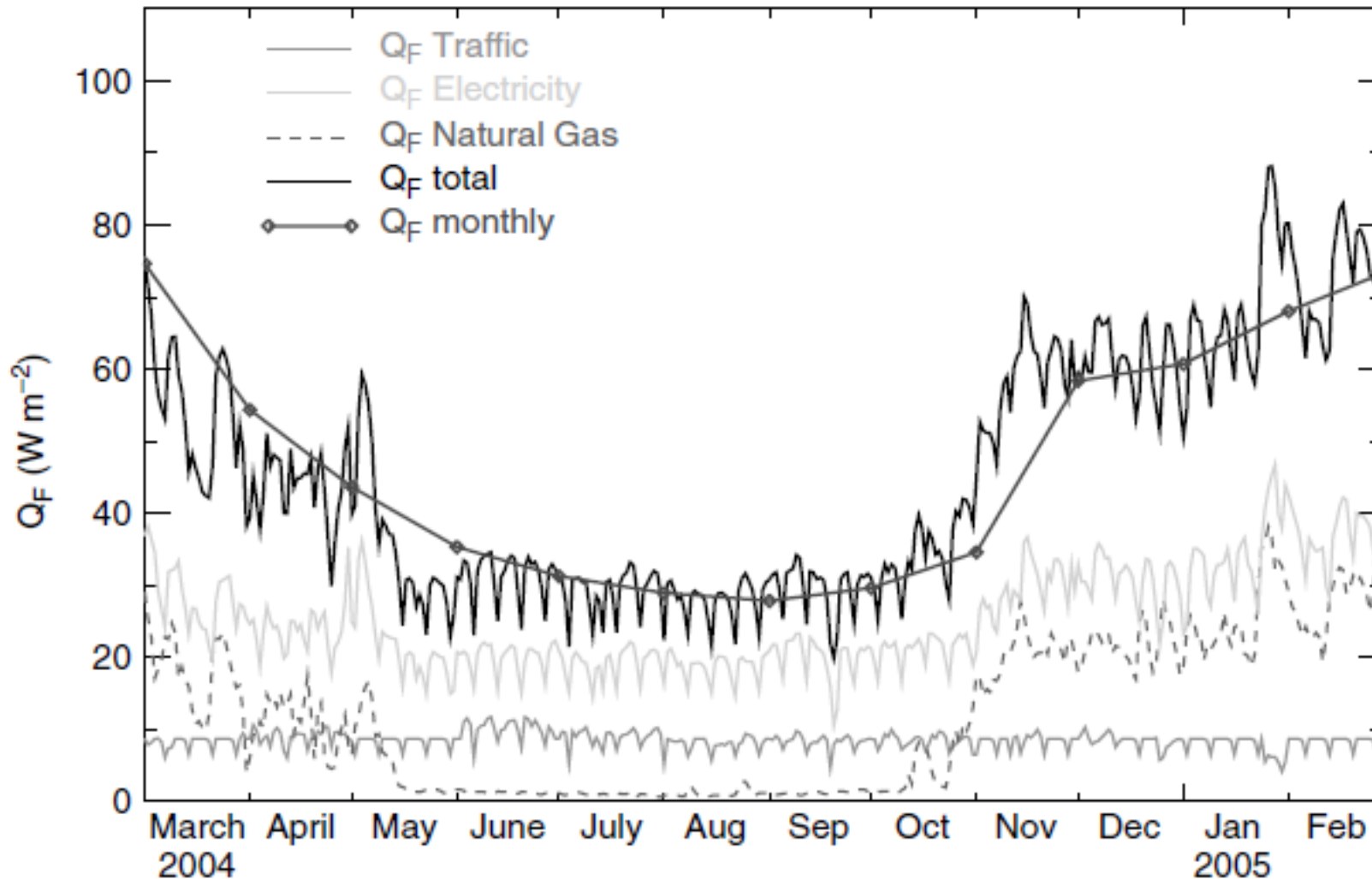
Building energy demand leads to

- Increase of anthropogenic sensible and latent heat flux
- Amplification of (nocturnal) urban heat island (UHI)

Feedbacks between UHI and building energy demand

- Negative during heating season
- Positive during cooling season

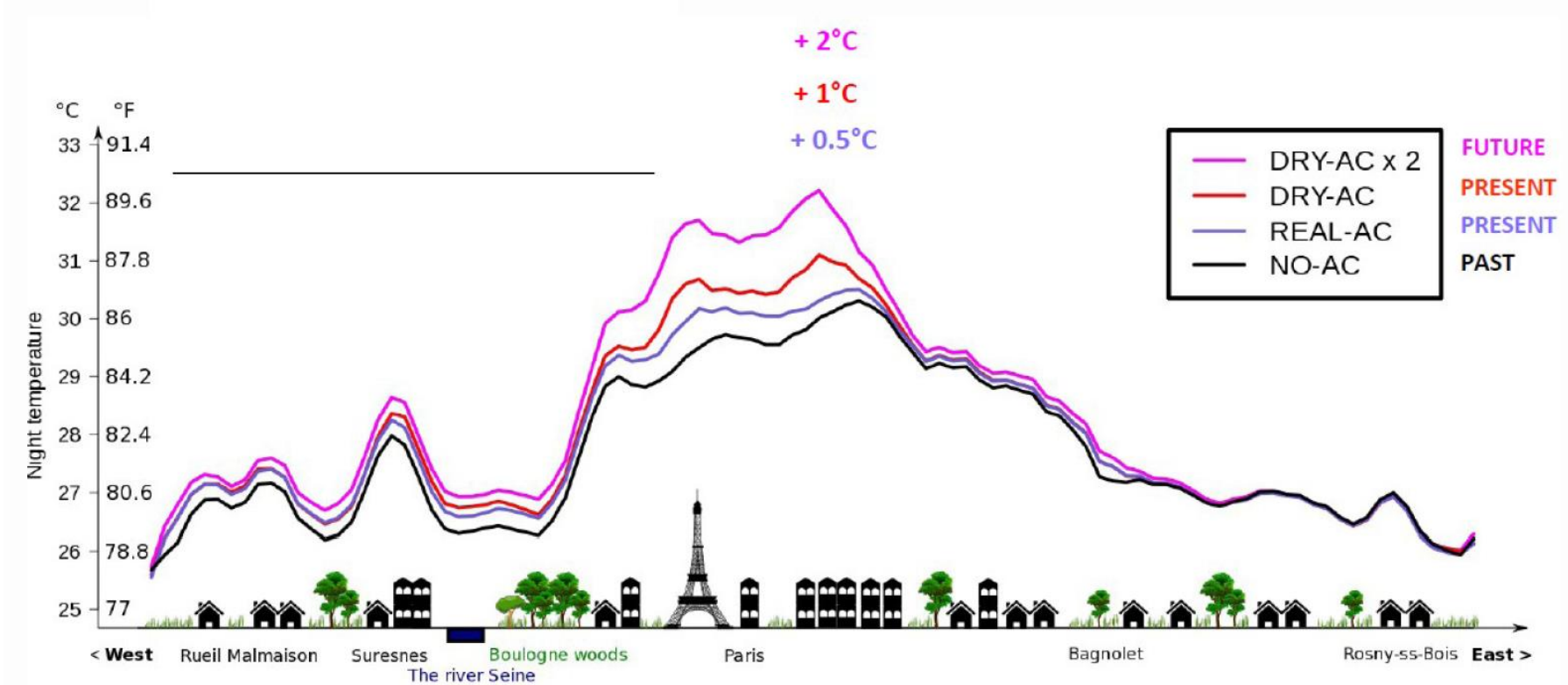
Anthropogenic heat flux (ex: Toulouse – CAPITOUL)



Pigeon et al.,
2007

Example: Impact of air conditioning on UHI

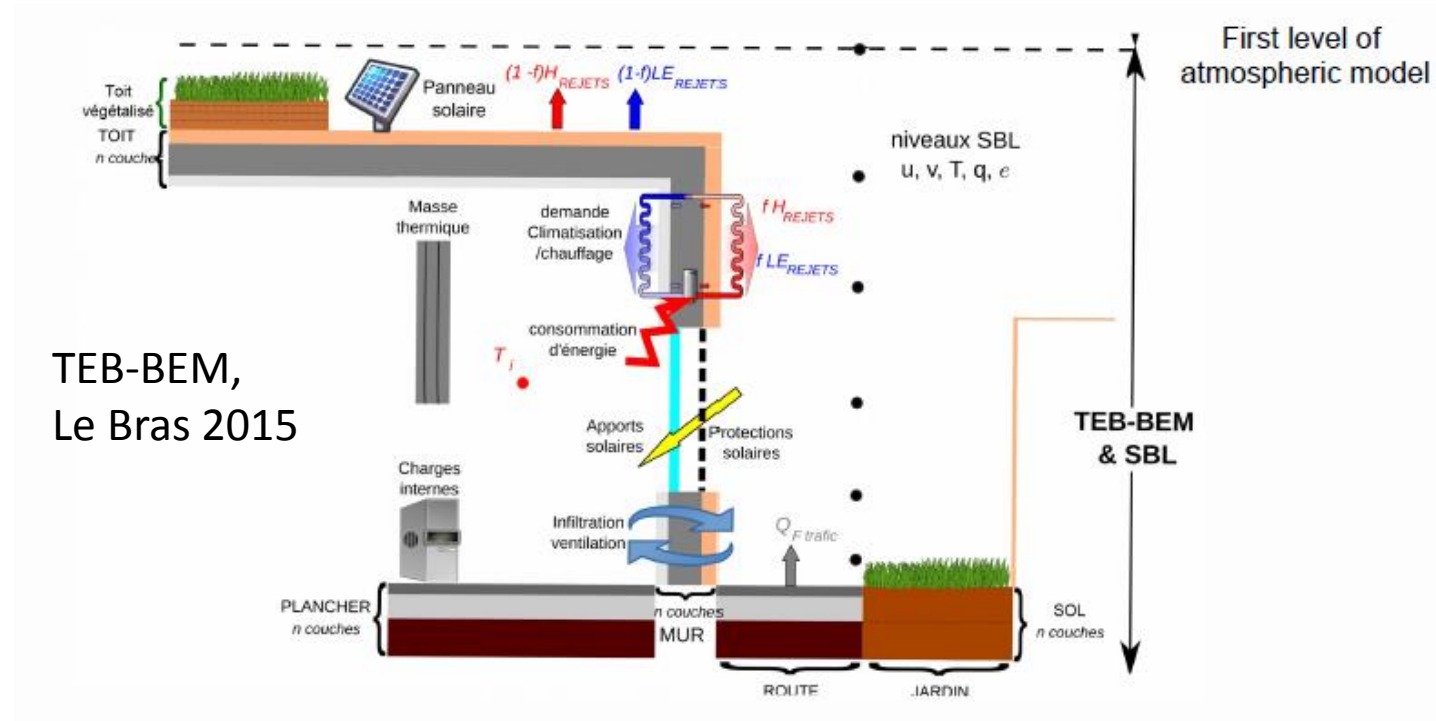
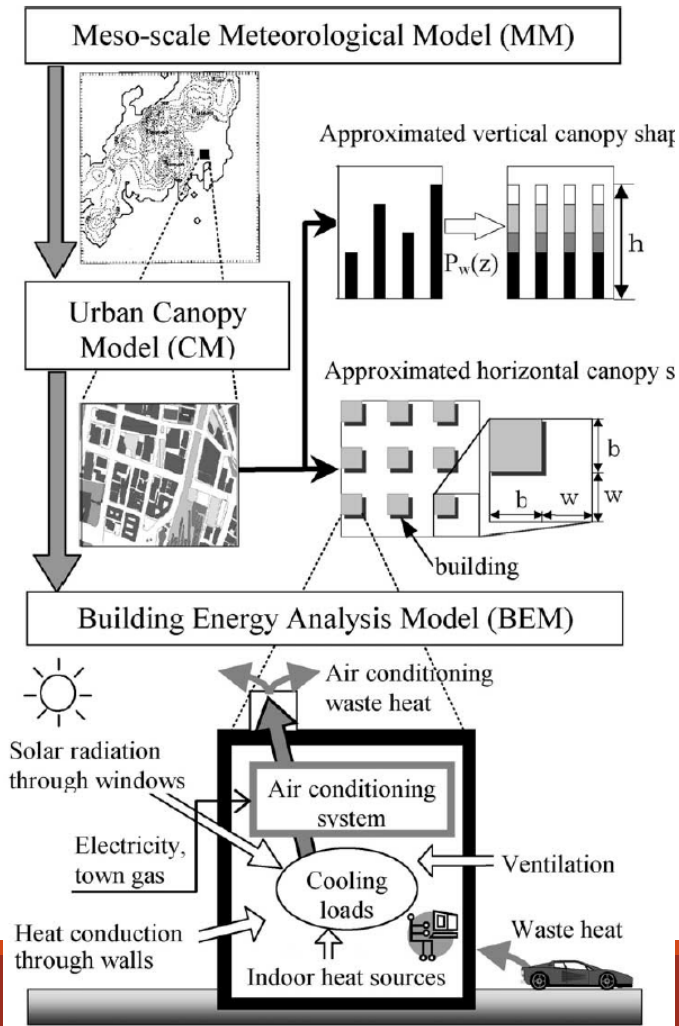
Result of De Munck et al. (2013)



Thank you

- ❑ Coupling urban climate models and building energetics models
- ❑ Mitigation, adaptation and urban engineering

Annex



Kikegawa et al
2003

Annex (TEB – BEM données CAPITOUL)

