

Contract/Proposal No. 019988

POLYSMART

POLYgeneration with advanced Small and Medium scale thermally driven  
Air-conditioning and Refrigeration Technology

Integrated Project

Call: FP6-2004-TREN-3

Priority: SUSTDEV-1.1.4 - POLYGENERATION  
Demonstration Projects

## **D3-32 SP8b-System Assembled**

Due date of deliverable: month 20

Actual submission date: 2008-07-30

Start date of project: 2006-06-12

Duration: 48 months

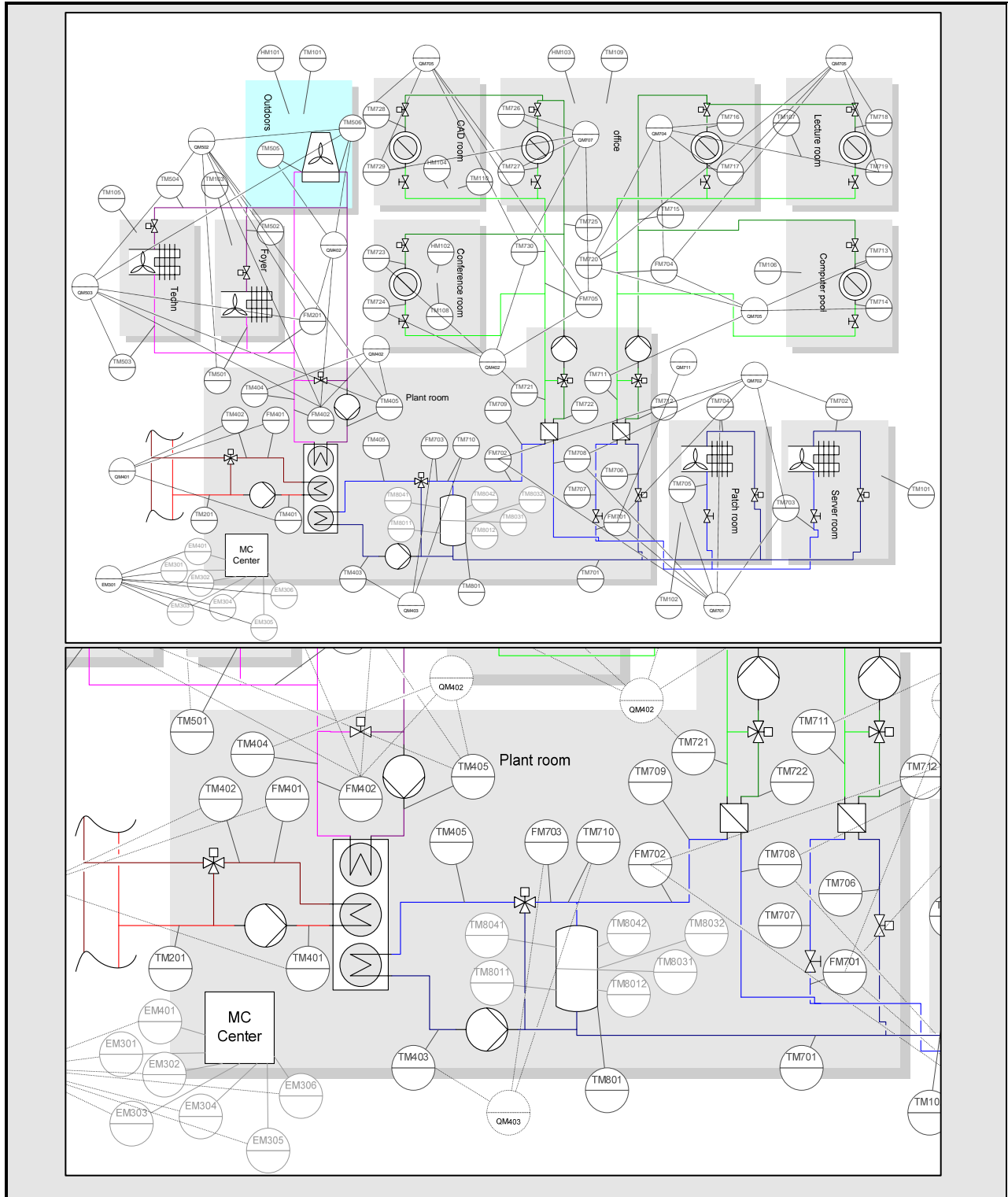
Organisation name of lead contractor for this deliverable: [TU-Berlin](#)

[Revision \[final\]](#)

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
<b>PU</b>	Public	X
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission	
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	

# Subproject SP 8b – system assembled/erected

## 1) Description of assembled system



#### Kind of load, building description

Office building incl. Seminar rooms and Server and Network Facility Rooms, All year loads in between 5 and 17 kW of cooling loads

#### Heat and cold distribution system

3 different systems are used, Fan Coils for cooling (7/12°C) and Heating (50/40°C), Free Convection Cupboards (8/13°C) and ceiling cooling (16/18°C) for cooling only.

#### Heat rejection

Heat rejection is done by a dry reject cooler in summer time and by inside fan coils in winter. Hence the cooling load is used as low heat source for a heat pump process, supplying heat demand of the laboratories.

#### mCHP

District heat network

#### TDC

As TDC the Suninverse 10 kW by SK Sonnenklima is used. Providing a cold water temperature of 7°C the system layout allows a capacity of 13 kW. Primary mover is the district heat network with a maximum temperature of 105°C in the west part of Berlin. This temperature is constant all over the year.

#### Storage

A cold water storage of 2 m<sup>3</sup> is implemented to provide additional cold during peak load times. It allows 2 hours of 4 kW load on its own. Therefore the system could provide up to 17 kW cold in peak demand times.

#### Data acquisition system

The data acquisition system stores nearly 180 values every two seconds, whereof 120 are measured values and 60 are control values.

#### Sensors

To be finished !

2) Pictures of assembled system

