The number of data centers around the world is growing rapidly. As a result, they have an increasing impact on the built environment. Concurrently, data centers produce huge amounts of heat. The C³ project aims to exploit the unique qualities of this waste heat resource to revalue vacant architectural heritage.

Since data centers have been leaving the confined spaces of cramped IT departments inside office buildings, they have been consolidating in data center enterprises with varying sizes and purposes. Many average-sized data centers, which are mainly designed by mechanical engineers—are popping up in cities all over the globe: the data center activitiy is turning into its very own building typology and warrants more attention from architects. Moreover, thanks to recent technological advancements, it becomes possible to transform these data centers into waste heat resources that can be turned on and off at will.

For this project, a design is developed in which the assets of this new building typology are integrated with the 'Van Gendthallen' in Amsterdam. The project focuses on and off at will.

The Datacenter Group |2007
TelecityGroup |2008
GYRO Center DC-2 |2009
Switch Datacenter |2011
Interxion AMS-1 |1999
Interxion AMS-2 |2000
RDC Datacenter |2010
Schuberg Philis |2007
Global Switch |2000
TelecityGroup |2008
XS4ALL DC2 |2003
Equinix AM2 |2011
euNetworks |2006
Databarn 1 |2009
Eweka DC |2002
DCA |2009

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Van Gendthallen
- integrated sustainable innovation on site-agreement
- decentralized energy as flexible climate system
- scalability opens up flexible climate solutions
- flexible climate reduces need for envelope adjustments
- heat generation can grow with development of area

Datacenter
- IT, telecommunication, and office levels as integrated data center
- densely packed and modularized with independent climate control
- flexible data center allows for faster adaptation to new requirements
- Autonomous thanks to sustainability and aesthetic appeal

Operating as heater - data center is active
- pre-heated by higher data center activitiy
- heat demand environment
- heat generation can grow with development of area

Operating as cooling system - data center is inactive
- pre-cooled by climate system
- heat demand environment
- heat generation can grow with development of area