ARCHITECTURE of WORKPLACES 1.

8. lecture

Office buildings
White collar factory on the grass

Prof. Vasáros Zsolt DLA, architect, head of department, professor/Nagy Iván DLA, architect, associate professor
BME Faculty of Architecture // Department of Industrial and Agricultural Building Design

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1. chapter: **Short timeline**
2. chapter: **The liquid nature of the present day office space**
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Planning guide

supplement no.1

Prof. Vasáros Zsolt DLA, architect, head of department, professor/Nagy Iván DLA, architect, associate professor
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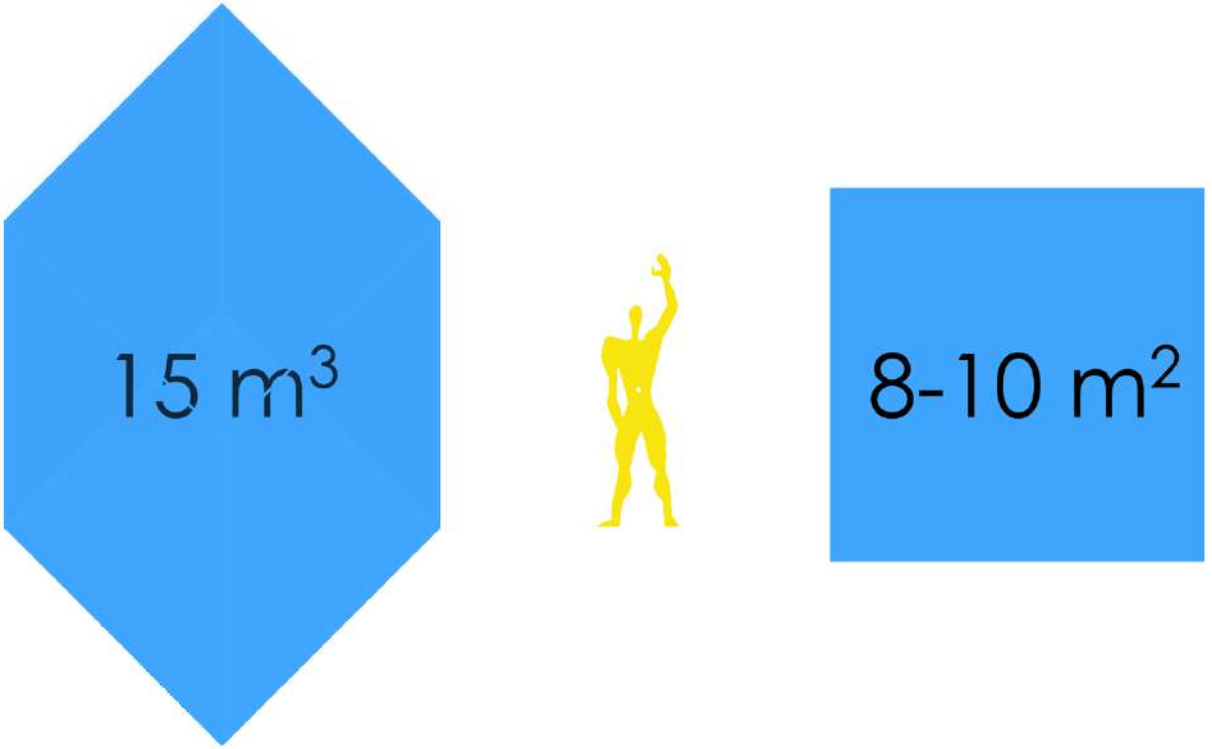
Size, scaling

OTÉK 85. § (4) a): minimum **15 m3 / person** – if the functioning of any building is not optimal, if it is bigger than it should be, in that case the construction and operation will consume much more energy than necessary. If it is smaller than it should be, in that case working there will be stressful and less efficient. The abovementioned minimum from the Hungarian Building Code (OTÉK) cannot guarantee anything in itself; however, any denser office area is excessive for sure. As an average designs calculate with **8-10 m2 / person** usually for the whole building in order to be on the safe side.



Size, scaling

One positive side effect of C19 (if there is any), that the bigger firms will prefer permanently 30-40 % „**home office**", and that will improve the usually too dense office arrangements. The number of online talks and meetings will increase even if the virus will disappear; so much more small meeting rooms (1-2 or 4-6 person) are needed in the future in order to avoid disturbances.

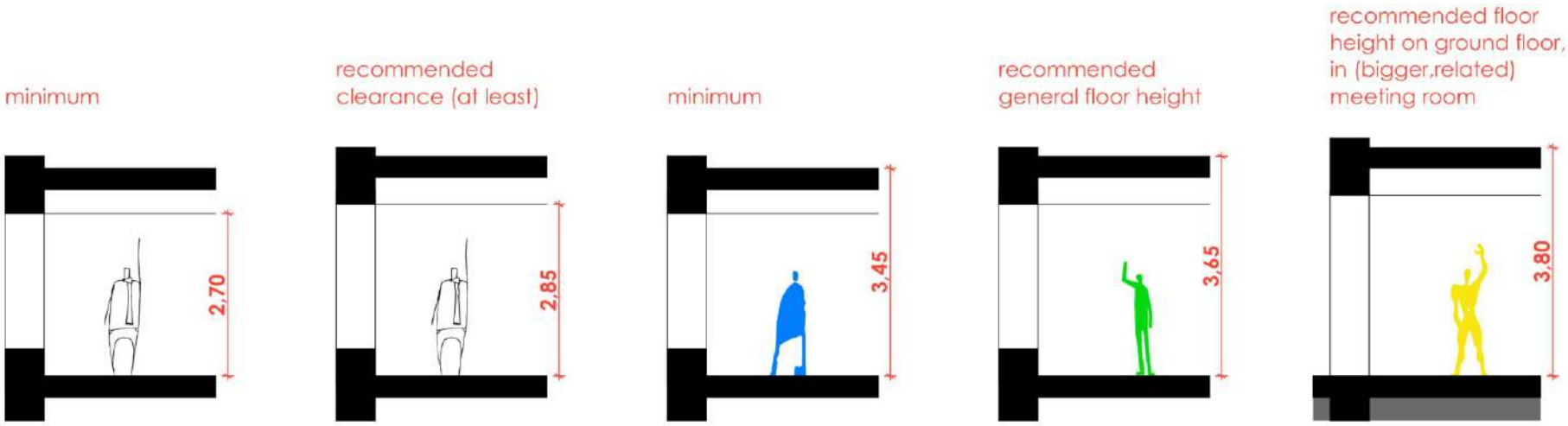
Size, scaling

Acoustic comfort has be taken more seriously from now on, for multiple reasons. On one hand, the trend is clear, the ratio of open or landscape offices will increase, and on the other hand, the ratio of so-called informal working area for impromptu meetings, team talks and collaborations will be higher, plus more and more employee will not have permanent working desk. These will create problems, according to observations more than 20 person in one uninterrupted office space is reducing efficiency and definitely a source of conflicts.

Therefore, it is advisable to arrange the closed rooms (manager cells, meeting rooms, so-called phone booths) in a way, that they a priori divide the open areas into smaller units. We can achieve a lot with acoustic partitions, wall coverings, with carefully selected suspended ceiling or floor covering; in addition, we can reduce the noise level with sound absorbing furniture.

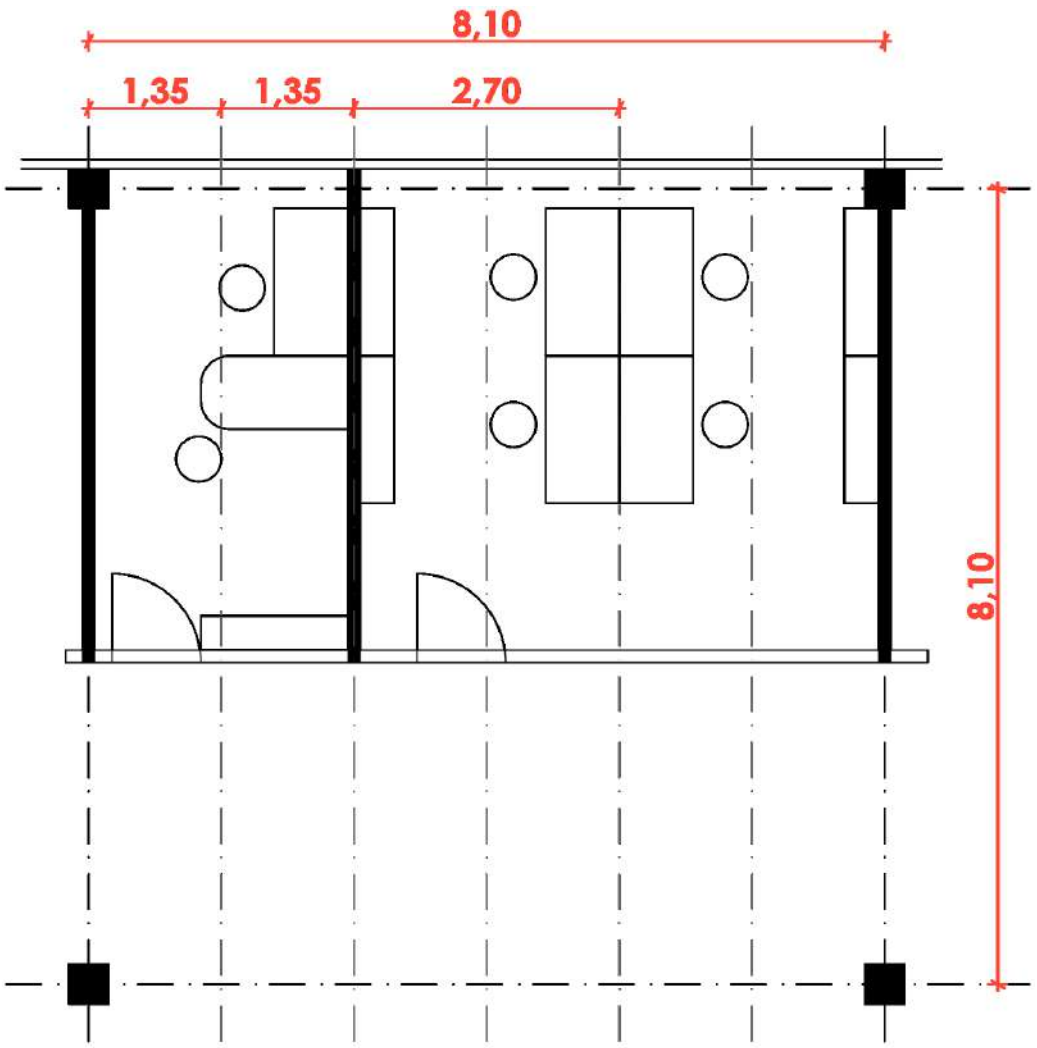
Clearance, floor height

Depends on the size of space, but in case of offices the acceptable minimum is 2.70 m. At bigger open offices and at deeper wings the recommended clearance is at least 2.85 m. The floor height is closely related to the used loadbearing structure and selected mechanical system, but according to experience anything under 3.45 m is compromise solution in case of new construction. Recommended size on general office floors: 3.65 m, or higher, on ground floor and in related bigger meeting room blocks: at least 3.80 meter.



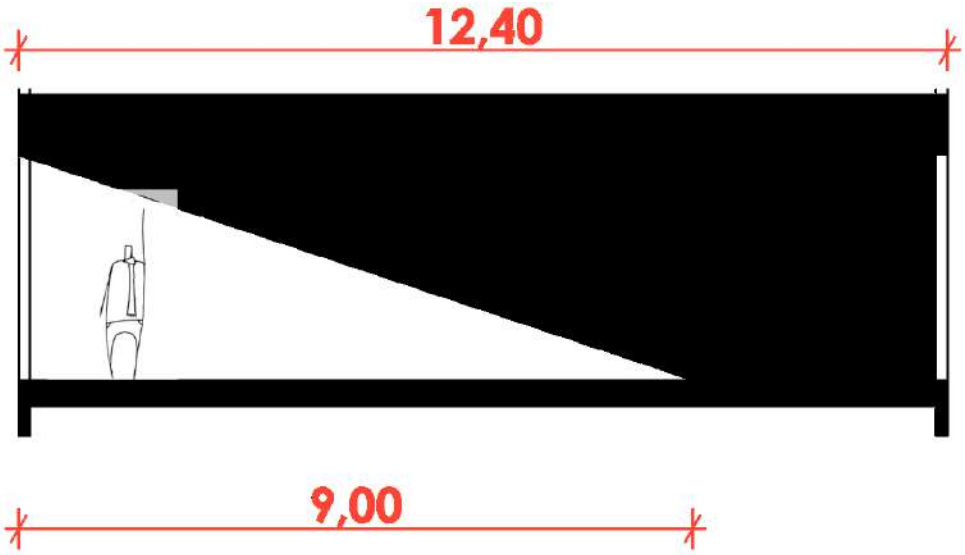
Modules

Regardless of the inner layout, all the office buildings follow a module system, and the basic unit is 1.25, 1.35, or 1.50 meter for decades now. The width of the rooms and the structural axis is a multiple of that basic unit. In case of 1.35 meter, the smallest cell is 2.70 minus one partition wall wide (2.60) and the distance between the pillars is 8.1 meter. The smaller 1.25 m works quite well, but it is considered a bit scarce nowadays, while the 1.50 m module is usually reserved for developments of higher prestige, see for instance „*One Pancras Square*", by D. Chipperfield London, 2013.



Modules

The width of tracts or wings are determined rationally (ergonomics, structural limits, quick and simple construction), they are between gross 12.40 and 20.40 meter in general. There are wider schemes in the Anglo-Saxon countries, but those are not accepted in Europe, because even with very high ratio of glazing no natural light enters deeper than 9.0 meter from the facade. The potential number and size of rentable units on the different floors is important also. The good formulas provide multiple entrances from one lift lobby without additional circulation area. Wet blocks are opened either from shared areas (lift lobbies) or from the rented area, and of course the two can be combined if necessary.

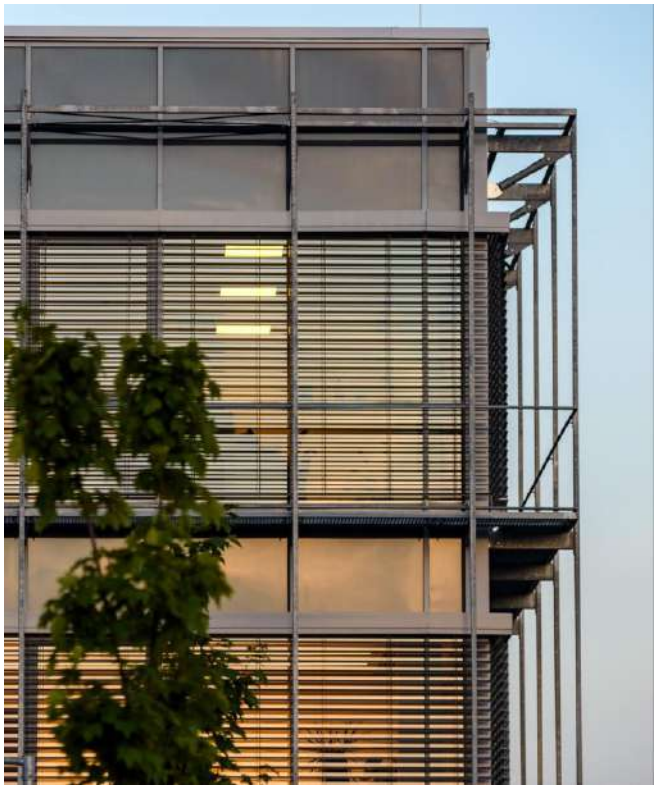


Urbanity

The sizeable office complexes that collect several companies into their buildings are efficient themselves, but the employees may have to commute long distances. Mono-functional blocks next to each other or long rows of office buildings are obviously harmful on urban level, in this case, "more is more" and multifunctional buildings or complexes are much better. The more different size is varied is the better, smaller coworking, or medium size offices together with the bigger ones have better chance to create lively neighbourhoods. Today we see something else alongside Váci út (13th district)…

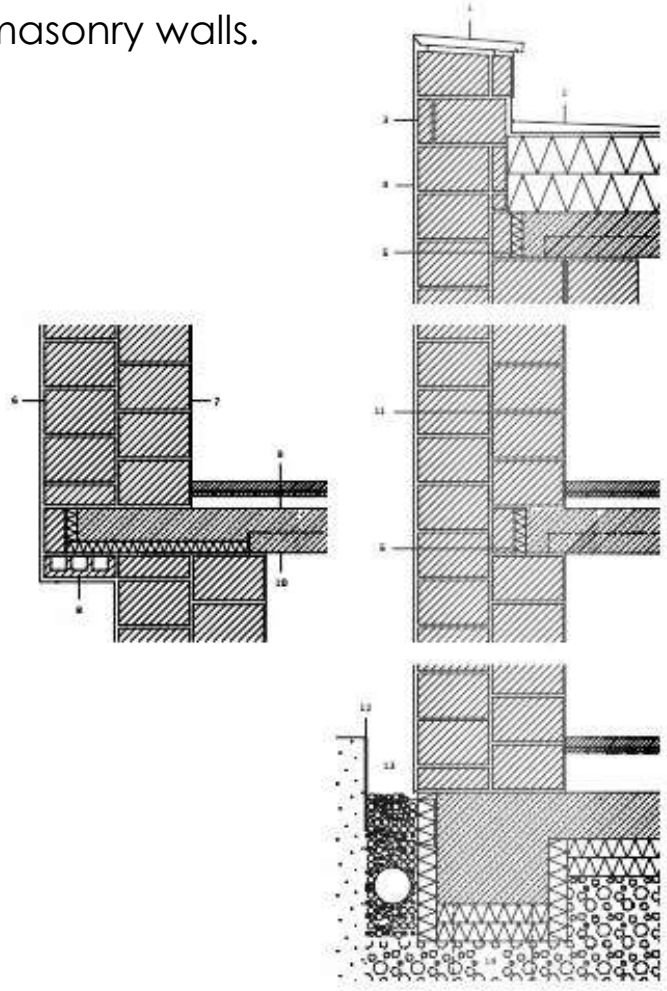
Sustainability

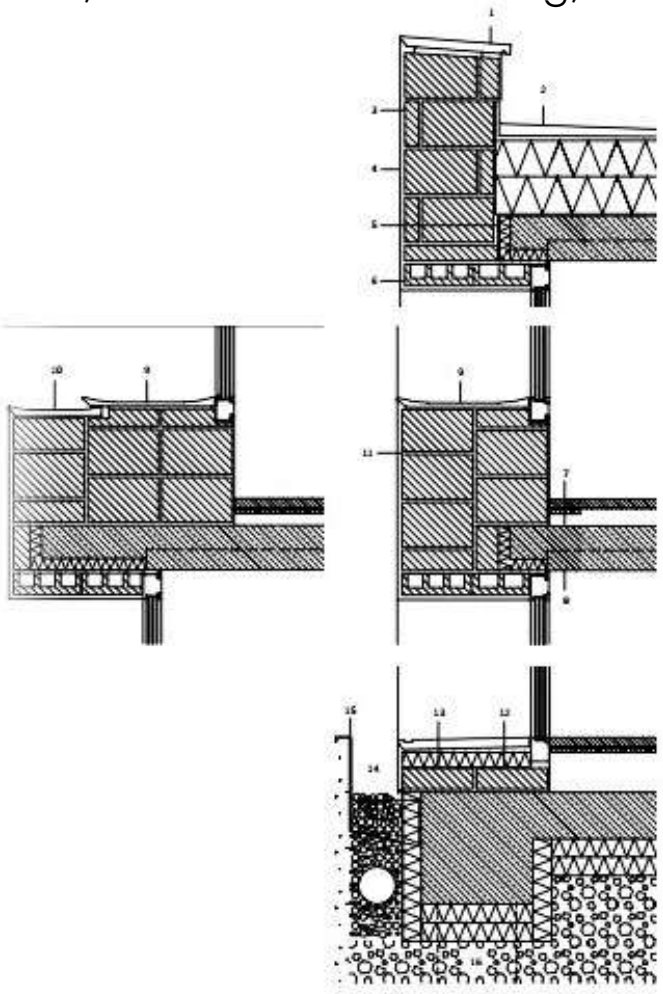
Offices for the most part consume a lot of energy because of the always-expected air-conditioning, a medium level LEED or BREEAM certification should not mislead anybody, they mean not more than that the given building is not wasting too much. In turn, the substantial reduction of the energy demand with architectural means is a realistic aspiration either with external shading or with radically innovative ways. To the first, there are several alternatives, but only the external louvres or sunshades between the glass panes have real value.



Sustainability

To the second, there are built examples by Baumschlager / Eberle architects, see their so-called Gebäude 22/26, (Lustenau, 2013) and 2226 Emmenweide (Emmenbrücke, 2018) buildings. Winter minimum 22 ˚C and summer maximum 26 ˚C, without air-conditioning, with 76 cm thick masonry walls.





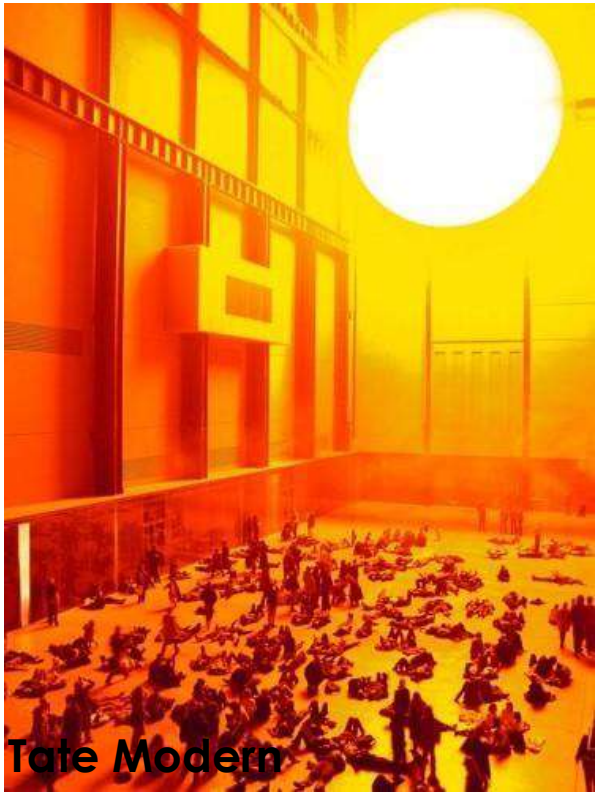
Sustainability

The other "green" tools that can be used everywhere are of course available here too. Green roofs, rainwater utilization, hybrid constructions (among others: combinations of timber and reinforced concrete), alternative energy production (heat pumps, ground heat, solar panels, photovoltaic roofs and others), as well as the selection of mechanical equipment and building materials according to the „life cycle cost" principle can make an office building environmental friendly. Fortunately, most of that is already an official requirement.

Existing buildings

We have to make the most of them, to compensate the drawbacks with innovative solutions. In the XXth century many building was replaced within 30 years. We cannot continue this practice on any grounds (societal, ecological and economic); we have to our best in order to utilize what we already have at our disposal. Recycling the building materials means a lot, however the refurbishment or reuse of the existing building stock is even more important, since in this way, we produce less waste and the energy built into the materials earlier will remain in the building for a longer service life.

FRAC Dunkerque



Tate Modern

Recommended list of office buildings

Swiss Re, München 2002, architect: Bothe Richter Teherani

FIH Bank, Koppenhága 2002, architect: 3xNielsen

Braun Headquarters, Kronberg, 2000, architect: Schneider + Schumacher

Cologne Oval Offices, Köln 2011, architect: Sauerbuch Hutton

Roche Diagnostics AG, Rothkreuz 2011, architect: Burkhardt + Partner

New York Times building, New York 2007, architect: Renzo Piano Building Workshop

KfW Banking, Frankfurt 2009, architect: Sauerbuch Hutton

Adidas Laces, Herzogenaurach 2012, architect: kadawittfeldarchitektur

Office building, Ijburg-Amsterdam 2010, architect: Claus en Kaan

Shenzhen Stock Exchange, Shenzhen 2013, architect: OMA

Euravenir Tower, Lille 2014, architect: LAN Architecture

Allianz Headquarters, Wallisellen 2014, architect: Wiel Arets

ÖKK Insurance, Landquart 2012, architect: Bearth & Deplazes

OP Financial Group, Helsinki 2015, architect: JKMM

Yardhouse, Sugar Inland London 2014, architect: Assemble

Facebook MPK 20, Menlo Park 2015, architect: Gehry Partners

22/26, Lustenau 2013, architect: Baumschlager Eberle

Recommended office interiors

Google Central, London (Central Saint Giles) 2012, architect: Penson

Disseny Hub, Barcelona 2013, architect: Baas

De Burgemeester Complex, Hoofddorp-Amsterdam 2013, architect: Studioninedots

Unstable office, Madrid 2013, architect: Carlos Arroyo

Mozilla Japan, Tokyo 2013, architect: Nosigner

Cargo, Genf 2010, architect: group8