MH1 LECTURES NO.8 – OFFICE BUILDINGS *WHITE COLLAR FACTORY ON THE GRASS*

1st chapter - Short timeline:

Scriveners or clerks exist for ages; this type of work was born together with the numbers and literacy. The first office workers recorded data and kept registers at the beginning, later as the human civilization became more and more complex their work became various too. We could start the story of contemporary offices from there, but within the given 2 x 45 minutes timeframe it is not possible and in 2021 these are rather curiosities only, not useful information.

One example: the world famous Palazzo Uffizi in Florence (1560), known as an art museum nowadays used to be the Medici's headquarters, however this is not important anymore from the point of view of our present topic, that is the up-to-date work space and it's framework, the office building.

The real story of them have started at the end of the XIXth century, in North America. The Home Insurance building (Chicago, Illinois) by William Le Baron Jenney from 1885, and the Wainwright building by Louis Sullivan from 1891 (St. Louis, Missouri) are the first rentable, purposefully designed buildings for office function in the present sense, the first prototypes of the „white-collar factory". Profit-driven real estate developers created both of them, who expected – let us not beautify the thing – perfectly functioning, properly dressed products from the architects.

As architects, we are prone to interpret the world in floor plans, elevations, 3D images and tend to forget the societal, cultural and technological background that defines our work. The type of building discussed in this lecture became possible thanks to several inventions like the elevator (Otis 1857, New York), the typewriter (Remington 1873, New York) and the telephone (Bell 1876). The electric lighting and the calculator was born in this period too, and these innovations together allowed much more efficient and concentrated information processing and work organization anywhere, even far from the factories, ports, and other commercial facilities.

The next important date is 1905, when the Larkin building by Frank Lloyd Wright (Buffalo, New York) was inaugurated. It can be considered as the first purpose-designed environment for a specific organisation. Looking back with today's eyes, in spite of the very careful detailing, innovative and exquisite architecture the Larkin was more a sort of elegant „prison of work" (it was demolished in 1950), where 1800 employees worked in an impressive single large space of galleries surrounding a central top-lit court, almost hermetically sealed from the outside world.

Wright tried to combine the industrial engineering and production management concepts of F. W. Taylor and H. Ford (end of XIXth century) with the principles and ideas of Arts & Crafts movement. The result was an open plan modern office where nothing hampered the work, all the services like staircases, wet blocks and mechanical shafts were placed sideways or at the ends of the building. It is worth to compare the Larkin-layout against the Lloyds-headquarters in London from 1986 by Richard Rogers. Practically the same logic…

Nevertheless, the true archetypes of the present-day office buildings were born a bit later. The architectural visions of Mies van der Rohe drawn around the 1920s are well known, especially the "Skyscraper" from 1919, however the so-called „Concrete office building" from 1922 should be equally familiar.

The Taylorist model layout of the office blocks – space optimization with central core that includes all the service functions and vertical circulation - within the Rockefeller Centre (New York, 1930 – 39) by Raymond Hood, was repeated several thousands of times too all around the globe. The technological development brought with it the rest, the first fully glazed transparent wall appeared on Le Corbusier's sketch (ministry in Rio de Janeiro, 1936) and the curtain wall became a reality in the fifties.

The modern office had started its triumphant path and it became the liked and respected, or on the contrary, hardly tolerated or even hated second home of millions. To show the quantities: only in Germany 385.7 million m2 office space existed in 2013. They may have passed the 400 million mark since…

TIMELINE, THE MOST IMPORTANT EVENTS AFTER WW II, IN CHRONOLOGICAL ORDER:

1950 UN, New York W. / K. Harrison, Le Corbusier, O. Niemeyer

4 floors of 39, as well as the roof, is occupied solely by air conditioning (comfort versus ecological footprint)

1956 Bürolandshaft,

W. + E. Schnelle (Quickborner Team) organisational theory

1957 Inland Steel, Chicago / SOM,

clear-span construction, no obstacles in the open office space (maximum flexibility), separate tower for all the services including circulation

1958 curtain wall, Seagram New York / M. van der Rohe

this building is so emblematic, that we believe the curtain wall was born here, the carefully proportioned I-beams were cleaned with lemon oil

1961 Chase Manhattan, New York / SOM

the "great" American company, with autonomous workstations, very deep plan, identical cubicles far from the façade with artificial, fluorescent lighting

1963 Osram, München / W. Henn

more egalitarian, flexible and scattered arrangement against too strict hierarchy and for greater interaction, sort of European answer, landscape version of open office derived from the so-called *Bürolandshaft* organisational theory, for the first time the diverse nature of office work was recognised (carpets and absorbing panels in the ceiling tempered the noise)

1968 Ford Foundation, New York / Roche, Dinkeloo

the birth of the green atrium, the building preceded its age with minimum two decades (although this is not a rentable office, but the headquarters of a rich foundation)

1973 Centraal Beheer, Apeldoorn / H. Hertzberger

sort of workers village, designed such that staff would have the feeling of being part of a working community without being lost in the crowd, this structuralist spatial matrix was a statement against previous models where corporate efficiency, control and productivity was more important than the human resource, despite the very positive goals, the building is rather a curiosity

1985 Gruner and Jahn, Hamburg / Steidle & Kiessler

the economic crisis in 1973 was triggered by energy costs and as a result the deep open offices fall from fashion. on the other hand workers and their unions became stronger and stronger in the so-called welfare states of Europe, and as stakeholders they could influence the development of offices, they demanded space standards per employee, access to daylight, views and openable windows. this example is the first of a model, that in different forms is still dominant on the continent

1986 Lloyds, London / R. Rogers

free central space, all the services are on the perimeter in separate towers, the technical components can be replaced easily when they become obsolete, high-tech rationality

1987 SAS, Stockholm / N. Torp

inner street serves as central spine and connects several buildings where cellular and combi offices (Tengbom invention) are varied, the covered street is for socializing, the employees have café, auditorium, swimming pool and sports hall here

1989 www

telegraph, telephone and internet: 3 revolutionary steps in long distance data transmission (real-time exchange)

1991 Chiat Day, Los Angeles / F. Gehry (refurbished in 1998, since 2011 owned by Google)

"iconic" building with casual interiors, where the otherwise tough reality of very long working hours are disguised and the interior is a sort of simulated ideal space

1996 BTelecom, Stockley Park / DEGW

out-of-town business park, up-to-date version of the Taylorist attitude with strong Scandinavian influence, and at the same time the beginning of outsourcing (home office) and hot-desking (no permanent workstation)

1998 Kessels Kramer, Amsterdam / FAT,

an advertising agency, located in an old church with surreal interior: garden sheds, lifeguard tower, Russian wooden fort and pieces of football pitches turn the office into a fun place

2000 Citibank, Canary Wharf – London / Forster and Partners

an updated, somewhat tamed version of the hierarchical American office, managers sit on the perimeter, normal workstations have no outside view, but the depth is reduced and the cubicle farm is not endless

2002 Swiss Re, München – Unterföring / Bothe Richter Teherani,

megastructure or network of smaller units, each of them organized along central corridors, high quality outdoor areas and landscaping, the appearance of well visible eco-friendly details

2004 Googleplex (the campus office), Mountain View / CWA + DEGW + W. McDonough

corporate campus boasting good interaction, casual interior where work areas are combined with research and learning, pleasant environment in reward for 24 / 7 operation mode and long working hours

2005 coworking, San Francisco SpiralMuse

lasted only for one year, but this was the first recognized coworking space

2013 22/26, Lustenau / Baumschlager Eberle

the office without mechanicals (HVAC), 76 cm thick brick walls (inside structural, outside insulating brick) quarantee the minimum 22˚, maximum 26˚ C temperature

2016 Apple, Cupertino / Foster & Partners + Arup

13 000 employees, refined simplicity according to the company philosophy (the brand is everything!), sophisticated but robust design aiming to incorporate environmental-friendliness, the address talks itself: One Infinite Loop, isolated paradise only for the chosen people

2ND CHAPTER – THE LIQUID NATURE OF THE PRESENT DAY OFFICE SPACE

„The passage from heavy to light capitalism and from solid to fluid or liquefied modernity constitutes the framework in which the history of the labour movement has been inscribed". Zygmunt Bauman (The liquid modernity, Polity Press, 2000)

The different industrial revolutions of the recent decades completely altered our work; we speak either about factories (robots), or offices. Thanks to digitalization the boundaries started to blur, whole factories and workflows can be controlled remotely, and anybody can do his or her office work practically anywhere, taking part in online meetings is not a problem anymore in your car or during your train journey. More and more the office work is performed globally, the working hours had started to flow apart consequently, and even the time lag hardly matters nowadays.

There is no clear border between home, work and leisure nor in time, neither in space. No wonder the conceptual framework within which we talk about offices and their types is changing too.

The traditional cell, landscape office (open plan), so-called "combi" office and "business club" arrangements and different combinations of them are still exist, moreover they represent the majority up till now, but the emphasis is not on these since the new digital generations entered the world of work. In which big corporate firms continue to dominate as the biggest employers, however their hegemony was broken, and they have to adapt if they want to attract the most talented and educated youngsters.

Very briefly about seven phenomenon that shape and describe the present day world of work (based on an Javier Mozas's essay)

Better together:

The notion of new mutualism turned up at the same time as the new generations entered the job market. "Let's do it together if we can, let's do it on our own and let's do it driven by a social mission" is the magic formula for many people who started to work around the last Millennium. The Agora Collective (Neukölln, Berlin) where work, art and food form the magnetic ingredients is a popular space for creative professionals from all fields (http://agoracollective.org). The Loffice here in Budapest is something similar.

The fun office:

The world of „8 hours work, 8 hours recreation, 8 hours leisure" was swept away by information technology; the division between them is unclear now. Globalization reached a new degree with digitalization and with such companies as Google and peers, which work in 24 / 7 operation mode. No surprise Googleplex was the first „campus office" in 2005 (leading architect: Clive Wilkinson), where longer and latent working hours because of the time zones were compensated with company provided services and pleasant working conditions instead of higher salary. Basketball court, coffee shops, pool and ping-pong tables, slides and e-playgrounds became natural part of the office environment.

The connected office:

The Dalles Google Data Center is approximately 8800 m2, and the staff is altogether 80 people due to the high degree of automation. These giant data centres among others make the connected office possible, the mobile one that can be anywhere in the world. The work culture of generation Y (Millennials) comes from university / college campuses and the essential is the laptop - headphone - coffee combo. Your office is where you are…

The hyperreal office:

Hyperreal means something different in this case as in painting. It is rather an escape from the harsh reality of business life and work into a shrewdly designed simulated world according to a Las Vegas or Disneyland pattern.

These hyperreal, most of the time infantile „theme park sets or playgrounds" are nevertheless controversial traps, where the employees are working for real profit in a sealed off virtual space. The first sample was built for an advertising agency (TWBA / Chiat / Day, 1998) in Los Angeles, and the trend arrived to Europe in 2007 thanks to Google (Google Hub Zürich, 2007). An up-to-date sample: Coworking Utopic_us, Madrid, 2016.

Office sweet office:

Office work has intruded into our homes, but the opposite is true also, home comforts are being brought into the workspace, our colleagues are "friends" at the same time and the company is almost like a big "family". One result of digitalization is that the actual building and its inner spaces are less and less important, the emphasis is on the interior atmosphere. Of course, this familiarity can be honest, especially in case of smaller firms or coworking communities (like for instance the Betahaus network from Barcelona to Copenhagen), however most of the time the bigger employers are reluctantly try to copy and adopt these good examples into their work routine.

Interiors within interiors:

The changing relationship between home, work and leisure was already mentioned. The same happened with the outside and inside too, urban squares, parks, streets and green areas moved into the office buildings. The SAS headquarters by Niels Thorp (Stockholm, 1987) follows the scheme of an inner street shrouded in vegetation, while in a contemporary Swiss example (group8 architects, Geneva, 2010) reclaimed cargo containers were installed in a high hall. They include all the auxiliary functions, like meeting rooms, kitchenette and others, and they appear in the vast space as houses of a village or small town. The working area of the office space is open, white and well lit with natural light, as if we would be outside, the containers are different they are colourful and more or less closed.

From fun to focus:

Dotcom companies dominated the decades before and after the Millennium, and they radically transformed the typical office patterns of the second half of XXth century. They especially broke away from the alienated open plan cubicle farms that are still so frequent in Anglo-Saxon countries (the space divided into semi-closed modular compartments). The google-offices were office / playground fusions and virtual theme parks at the same time, where infantile details concealed the reality, and created stage sets of an alternative world. This wave went around the whole globe and those companies that compete on the global market were forced to follow the trend.

The innovative new tech firms have grown into giant corporations by 2020, and young generations became adults together with them. We are on a path that leads from the "wild waters" towards calmer offices where focus is more important than fun, and where the emphasis is on sustainability, reuse and refurbishment.

The sequel will be diverse and viruses will influence it…

BACK TO THE LOCAL SCENE

Offices are a very important type of building; they influence the daily life of tens of thousands, and will soon will affect hundreds of thousands only in Hungary. Despite the fact that this is one the most frequent function among the new constructions, office buildings do not enjoy high prestige within our profession, according to an extreme and false position this not even architecture. The reasons are manifold; I will come back to this later.

We have had several office buildings back in 1990, but most them with a few exception was not in good condition, they lacked the necessary floor height, technical and comfort level. Their fate was or is determined by the real estate value of their site.

Here in Budapest millions of flexible and well-functioning office m2 was missing in 1995 compared to Vienna or any other European big city. As a result, real estate developers focused on quantity first in order to reduce the gap. Our capital still needs some time to catch up in spite of the serious investment of the last two and a half decades, so the true competition of quality is yet to come. Many small firm operate in altered flats, because we do not have enough affordable rentable office. The situation is even worse in the bigger countryside towns.

Architects working on an office building have to solve many tasks regardless of the location. Contradictions has to be resolved between the business requirements and urban context (or lack of it), and between profit orientation and quality working environment (quality architecture). Unquestionable proven models, developed in global competition, has to be learned, applied locally and filled with content. With other words: a function neutral in nature has to be endowed with architectural meaning, something that involves self-contradiction, but not an impossible task. Be careful, the marketing aspects of the developers do not carry real significance most of the time.

The two main battleground for architects are the elevations and the inner working spaces. In case of the former architects should strive for the maximum in the multiple grip of an otherwise identical inner content, budget constraints, brand demands, fire protection and building physic regulations, as well as cityscape expectations. In case of the latter humane interiors, natural light, proper and well-scaled spaces, professional acoustic design and flexibility are needed.

I would like to illustrate the above with two own works. Both of them are more than 10 years old, however they represent models that are functioning very well, and both buildings are still valid from architectural point of view. These building have already been proven…

Science Park – free-standing buildings, but not without urban context. The site is in border position: the framed blocks and closed streets of the dense inner part of south Buda end nearby, and another area starts here with a different built-in pattern of the neighbouring housing estate. The complex absorbs both, towards the city it is a "wall with gaps", but at the same time the whole is permeable, passage is free from every direction. The green goes into the building, or the wings reach out into the park, the two exist in symbiosis. One central core serves all the wings, the smallest possible rentable area is 200 m2. Thanks to the varied building mass the elevations could be restraint, and they follow a systematic order, where high transparent curtain walls counterpoint the economical plastered surfaces. External shading complements the high quality sun protecting glass.

VOC (Kapás street) – complicated urban situation, descending building mass as a requirement, partly medieval street network and Carmelite monastery ruins found during construction, removed metro ventilation shaft and civil defence shelter. The meander-like winding volume solves most of the problems with one move, including the stepping down, and thus even the two entrances are almost coequal. The shifted over each other window units bring life and movement into the strict order. The layout is organized around two inner vertical core; each allows 4-4 independent renting units. All the services are placed within the rented area, two extra shafts allow the installation of additional wet blocks. The basic module is 3.0 meter on the street sides and the same is 2.5 m on the less valuable courtyard side. This was the first office building in Hungary with sunshades between the glass panes.

SUPPLEMENT NO.1 / BASIC PLANNING GUIDE

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.

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.

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 remaining 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, modules:

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.

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 middle of 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.

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 sizes are 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)…

Sustainibility:

Offices for the most part still 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.

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.

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 do 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.

SUPPLEMENT NO.2 / DICTIONARY

accelerated serendipity - higher probability of positive breakthroughs resulting in collaboration between people with different interests but with the same pro-active approach to life

adhocracy – this is a term made popular by Alvin Tofler in 1970 and researched by Robert H. Waltermann Jr. for his book *Adhocracy: The power of change*, 1993. This term defines a new type of work organization, with greater decision-making and minimum hierarchy and bureaucracy, capable of adapting to the implementation of specific time-based tasks

bakery / coffee shop (2^x) – place for active nomadic work, opportunity for chance encounters and collaboration

better together mentality - way of thinking and acting of individuals who meet up to harness energy and knowledge in an aim to reach their target

clan culture – coined by Bruce M. Tharp in 2005, this take place in companies which value cohesion, commitment and staff loyalty to reach productivity targets. Companies practising clan culture are like families and their managers are seen more as paternal advisers than bosses

coworking space – working space shared with other independent professionals carrying out different tasks. The term was first used by software developer Brad Neuberg who in 2005 set up the shared space spiral muse in San Francisco

creative class – social group of professionals who have a decisive influence on the post-industrial economy through creation, knowledge and innovation. term coined by economist and sociologist Richard Florida in his book *The rise of the creative class,* 2002.

cubicle farm – open-plan office divided into individual semi-closed compartments in which employees are audio-visually isolated. the cubicles are built with panels and modular elements which can be adapted according to corporate requirements. robert probst is held to be the inventor of this much-reviled element even though it was merely a cost-driven deviation from his action office system, designed for herman miller inc. in 1968.

clubhouse (1) – place for active nomadic work, opportunity for chance encounters

deskless office – office with no allocated desks, where each desk is equipped with a monitor and where computers and personal objects are removed each day at close of business. employees store their belonging in personal lockers.

digital sweatshops – on-line companies which hire people to carry out poorly-paid routine tasks which can be done remotely on the employees own computer.

dilbertian – dilbert is a satirical character from a comic strip created by scott adams in 1989. he represents an engineer at a technological firm who has problems in the workplace. by extension, dilbertian refers to any person who suffers the same working conditions as dilbert.

disaggregated workforce – also referred to as contingent, this made up of non-permanent staff performing casual home-based activities for a company. the term was defined by ryan coonerty and jeremy neuner in their book *the rise of the naked economy*, 2013.

hierarchical culture – this type of of culture is related to large corporations and institutional structures. they value process standardization, efficient results and employee control. the decision-making process is assigned to those in senior management positions. bruce m. tharp, 2005

huddle room (11) – meetup spaces inside the office environment, with informal furniture, where employees can have 3- or 4-person conversations. (quiet nomadic work)

I-bar (6) – active nomadic work, visitor workspace

informal mentoring – relationship built up between two people, whereby the older of the two listens, advises and trains the younger person, with no obligation or contract.

library (5) – quiet nomadic work, visitor workspace

mechanical turk – simple low-paid digital system for carrying out routine work which is done by people rather than machines as it requires a minimum level of human intelligence. workers are casual and home-based.

microworker – worker carrying out small tasks for on-line companies. the worker choose the hours and the workplace. as this work takes up only a few minutes of the working day, it is compatible with a full-time job.

multi-generation workforce – the following generations all co-exist in the current workplace: baby boomers (born between 1940 and 1964), generation x (1965-1980) and millennium or generation y (1981-1995). generation z (1996-2010) is the next in line.

open huddle (9) – impromptu team collaboration

people-centric workspace – the term derives from people-centred development strategy, a movement aiming to empower communities and people against institutions. in terms of work organization, it reflects the will to improve the quality of the work space in accordance with employee needs rather than production requirements.

reverse mentoring – relationship between two people in which the mentor is a young person, generally with less experience, who has stronger skills in a specific knowledge area. this often occurs when generation y members give baby-boomer executives training in technological issues.

sick building syndrome – set of workplace-related symptoms in buildings with low-quality air, contamination from certain building materials, bad lighting and lack of appropriate noise insulation.

sound masking – technique which involves adding sound frequencies to an open-plan office in an aim to mitigate the disturbing sensation resulting from conversations and background noise. noise-cancelling speakers are used to suppress this noise.

swarm work – way of working which, unlike teamwork, is conducted by members who occasionally get together to perform a specific task, with no hierarchy and with no prior relationship between them and whose collaboration culminates when the task finishes.it is a way of working common in adhocracy which is also used in corporate firms.

super-flexibility – capacity of a large company to stay agile and versatile while also being robust and resistant, adopting features common to small enterprises in their operations.

supper club (3) – alternative dining setting for focused collaborative work

taylorist office – space based on the specific organization of work, according to frederik winslow taylor 1911, who aimed to maximize productivity by using a process system based on the division of labour and time control.

terrace (7) – quiet alternative for nomadic work, visitor workspace

third places – places where administrative, creative or business tasks unrelated to the home (first place) or the traditional office (second place) are performed. main features are informality, security, beign open to the public and a good atmosphere. examples of third places are: libraries, cafeterias, community centres, bookstores, parks…the term was described by ray oldenburg in his book *the great good place*, 1989.

touchdown place – in shared work places this is the most open area.it is used by people who are passing through or starting up their careers. they include the minimum services required to perform an activity: a counter with stools internet access.

triple bottom line – criterion assessing the success of a company from three viewpoints: financial results, social responsibility and respect for the environment. the term was first used by john elkington in 1994.

vibe of working – feature of the work environment referring to that intangible part regarding comfort and sensations. this is the third attribute to be taken into consideration in collaborative work spaces, after location and infrastructure. the importance of this third feature was highlighted by ryan coonerty / jeremy neuner in their book the rise of the naked economy, 2013.

work culture – working practices specific to a given environment or location which may or should influence the design of the workplace.

work modes – focusing, collaborating, learning and socializing. these are the four ways in which the knowledge worker operates according to the gensler workplace survey, 2008.

[x] *the numbers in brackets were given by Clive Wilkinson, they show his gradation of workspaces from „hot" (1) to cold (13, normal cell or cubicle) „Designing spaces for new ways of working, Designboom, May 2014*