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The Lock Down City and the Ʊtopian Program of Open Interfaces

Architectural Security Concepts

As a spatial-material and figurative configuration, architecture has always had major significance for aversion of hazards and the creation of security. Not only do buildings literally shield from external dangers, they impart experiences which can create feelings of security for the recipient. Architecture as a symbolic form of communication is traditionally marked by connotations which relate to stability and reliability. Looking at its conditions for production and creation, they are integrated in negotiation and decision processes in which security interests of individual social groups as well as of political and economic institutions are articulated.[1]

The present article takes this perspective and addresses current concepts and perceptions of urban security constituted and represented by specific types of architecture. The selected examples are significantly marked by the policy of internal and external security of the past two decades and they provide insight into what is regarded as a social threat. Here the issue will be explored as to whether and in which way they can be understood as being manifestations of a new security policy designated as "preemptive".[2] The policy of the preemptive presupposes that there are more and more existential, uncontrollable security threats which increasingly require security measures.[3] From this perspective almost all public spaces, urban infrastructures and buildings are declared security-critical zones and for this reason are to be planned and designed in such a way that they prevent the emergence of any potential risks, thereby eliminating the risk of damage from the start. Their materializations are regarded as speculation toward future risks of any kind.

Whereas façades and enclosures are being increasingly locked and fortified, new virtual barriers, whose marked effects remain invisible in many

1 See Krause, Katharina: Sichtbar und sicher: Wohnhöfe des Adels in Münster in der ersten Hälfte des 18. Jahrhunderts, Politiken der Sicherheit 4, Baden-Baden 2018, p. 17–22 (Chapter "Die Fassade: Schnittstelle zwischen Wohngebäude und Straße").

2 Albrecht, Hans-Jörg: Wandel der Sicherheit—Von präventiver zu präemptiver Sicherheit? Entwicklungen der Sicherheitspolitik in Systemen des öffentlichen Personentransports. In: Fischer, Susanne; Masala, Carlo (Eds.): Innere Sicherheit nach 9/11. Sicherheitsbedrohungen und (immer) neue Sicherheitsmaßnahmen? Wiesbaden 2016, p. 209–229, here p. 209.

3 See Fischer, Susanne; Masala, Carlo: Die Politik der inneren Sicherheit nach 9/11. In: Eid. (Eds.): Innere Sicherheit nach 9/11. Sicherheitsbedrohungen und (immer) neue Sicherheitsmaßnahmen? Wiesbaden 2016, p. 1–9, here p. 5.

cases, are being created using GPS-controlled technologies. It is these extensions of building envelopes into multi-layer, overlapping systems out of structural and digital spatial barriers which shall be elucidated below. The architecture historian Dietrich Erben calls the façade a "means of social distancing"[4] which applies with greater account also to the hybrid limitation systems of current security architecture. Where the architectural envelope moreover becomes a support for digital monitoring images, distancing can reach the point of systematic intimidation. Image façades designed in this way then become means of social disciplining which are chiefly being re-discovered by authoritarian states.

In conclusion, the article elaborates an alternative interpretation which does not regard security and a sense of security as a condition or impression, but as an activity which is created through urban diversity, social encounters and human interaction in a public space. This interpretation of social-spatial security characterizes a series of contemporary architectural drafts which transform building envelopes into publicly walkable spaces. They take up concepts developed by the US urbanologist and architecture critic Jane Jacobs who blamed the disintegration of urban functions for an increasing degree of social insecurity and spatial dilapidation in the 1960s. Current Common-Spaces movements and Hybrid-Places projects indirectly resort to her controversial ideas and practices of informal social security. In this sense, the article discusses the relationship of *obedience* and *disobedience* in the conflict of physical-virtual control architecture on the one hand and intensively-used public urban spaces on the other hand. Requests for co-production of the city, for urban mixture of utilization and living neighborhoods are regarded as forms of criticism of post-democratic security obsessions. The article then concludes with the question as to what consequences the Jacobs' concept of an open, unpaved city has for the digitalization of the city: To what extent does it offer the opportunity of imagining a type of *smart city* which does not follow the interest of competitive and surveillance states and a few influential Internet companies but serves the common good, thereby creating security.

4 Erben, Dietrich: Zur Architektur der Frühen Neuzeit aus der Sicht der historischen Anthropologie. In: Schweizer, Stefan; Stabenow, Jörg (Eds.): Bauen als Kunst und historische Praxis. Architektur und Stadtraum zwischen Kunstgeschichte und Geschichtswissenschaft, vol. 2, Göttinger Gespräche zur Geschichtswissenschaft 26, Göttingen 2006, p. 461–492, here p. 472 (translated from German by the author).

Anticipation of Disaster

Whereas political enemies could be geographically pinpointed during the decades of the Cold War, current threats to industrial nations cannot be localized. Terrorism, organized crime and cyberattacks, but also risks such as financial crashes, climate change and pandemics lack any territorial definable profile, any nationality, they can emerge at any time and in any place. Although there was already mobilization against continuous, unforeseeable and undefined threats during the Cold War era, the vague fears were always aimed at external risks. A logical consequence of such threat scenarios was to move architecture below ground and to refrain from visible buildings as potential targets of attack.[5] The model *Nuke Proof Manhattan* (1969) by the architect and urban planner Oscar Newman showed the paradox which building as protection against external threats produced: An internal world submerged underground requires a fictional external world (**Figure 1**).[6] As protection against nuclear attacks on the densely populated big cities along the East Coast of the United States, Newman imagined a gigantic hollow sphere below Manhattan in which a modern city was built underneath an artificial sky dome. An idealized external world was part of the internal world and suggested the illusion of control over the environment and hence the mode of survival during the disaster. Even if the subterranean model of the world remained a utopia, it anticipated what Newman called "defensible space" in 1972.[7] In view of rising crime rates in the large-scale housing projects of the United States he developed the concept of the protective urban space with the hallmarks of territoriality, surveillance and control.

These concepts are also the basis for the safety narratives of contemporary urban development and architecture in Western societies.[8] National security institutions such as the United States Department of Homeland Security founded in 2002 or the Justice Department which invoke an exaggerated threat sensitivity by using ritual mantras such as "Don't be afraid,

5 See Colomina, Beatriz: Domesticity at War, Cambridge, Mass. 2007, p. 279–283.

6 See Newman, Oscar: Countdown for Small Towns. In: Esquire Magazine 73 (6), 1969, p. 180–187.

7 See Newman, Oscar: Defensible Space: Crime Prevention Through Urban Design, New York 1972.

8 See basically Graham, Stephen: Cities Under Siege: The New Military Urbanism, London and New York 2010.

be ready!"[9] or "The crisis [...] is right on our doorstep"[10] are ensuring their reemergence. Phenomena such as vagrant violence are included in the new global threats which can no longer be sufficiently contained by the control regimes in spite of preventive measures.[11] They have supplanted the figure of enemy nations and systems and thus the concept of clear enemy lines and identifiable enemies.[12] Accordingly, it is the risks coming from within society which are increasing and can emerge anywhere. Contemporary architecture intends to counter the alleged invisibility and non-locatable spatial presence of risk with the powerful image of fortress-like security buildings. As the threat to be averted becomes increasingly vaguer, architecture itself is becoming more and more a compact and well-visible object of defense. The need for security is vulnerable to authoritarian seduction.[13] First, all government architecture, in particular state departments, embassies or secret services, were built like citadels which in recourse to early modern fortress architecture not only constitute a functional, but a semantic armament.[14] At least since the 9-11 attacks many civilian buildings have also been transformed into armored protected buildings whose façades simultaneously operate as *tactical envelopes,* as the multi-layered, bulletproof and stab-proof protective vests for police and military are called.

9 Banner headline of a new U.S. Department of Homeland Security website unveiled as part of Tom Ridge's Get Ready program, 2003. See Brzezinski, Matthew: Fortress America: On the Front Lines of Homeland Security—An Inside Look at the Coming Surveillance State, New York 2004, p. 103.

10 Barr, William, quoted from: Oval Office: Remarks by President Trump on the National Security and Humanitarian Crisis on our Southern Border, March 15, 2019, https://trumpwhitehouse.archives.gov/briefings-statements/remarks-president-trump-national-security-humanitarian-crisis-southern-border-2/ (June 1, 2021).

11 See Heitmeyer, Wilhelm: Kontrollverluste. Zur Zukunft der Gewalt. In: Heitmeyer, Wilhelm; Soeffner, Hans-Georg (Eds.): Gewalt. Entwicklungen, Strukturen, Analyseprobleme, Frankfurt am Main 2004, p. 86–106.

12 See Albrecht 2016, p. 210.

13 See Heitmeyer, Wilhelm: Autoritäre Versuchungen. Signaturen der Bedrohung 1, Berlin 2018, p. 10–11.

14 See Moos, Stanislaus von: Turm und Bollwerk. Beiträge zu einer politischen Ikonographie der italienischen Renaissancearchitektur, Zurich and Freiburg i. Br. 1974.

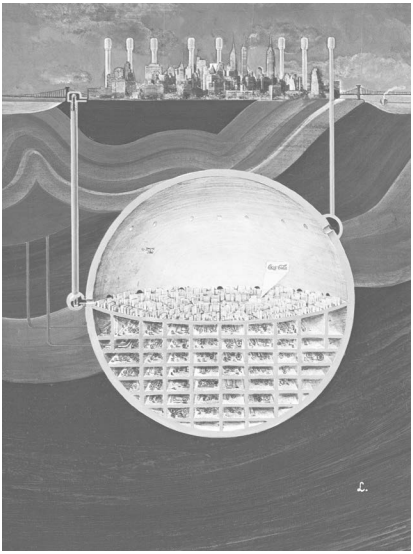


Figure 1—Oscar Newman, Nuke Proof Manhattan, 1969. Sectional perspective. In: Esquire Magazine 73 (6), 1969, p. 187.

Figure 2—David Childs (SOM), One World Trade Center, New York, 2003–2014. Photo: Luigi Novi, 2012, https://de.wikipedia.org/wiki/Datei:4.28.12FreedomTowerByLuigiNovi5.jpg (June 1, 2021).

Massive Distancing

The skyscraper of the *One World Trade Center* in New York proved to be a manifestation of the new security paradigms in the recent past. The most noticeable building protection precautions includes the almost sixty-meter high, windowless concrete base, whose steel-titanium mix is intended to withstand even the most powerful explosions (**Figure 2**). The glass cladding is unable to hide the bunker-like impression given by the building. The architecture critic of the New York Times, Nicolai Ouroussoff, presciently revealed the new landmark as a "barricaded fortress", which "speaks of paranoia"[15]—as architecture of trauma, embodiment of fear of attacks: "It announces to terrorists: Don't attack here—we're ready for you. Go next door."[16]

Since the globalization of threats and the corresponding loss of control, Western governments, institutions and companies have been advised by military experts, security companies and the police on the protection of their buildings.[17] Whereas in the 1980s and 1990s the technical security recommendations were initially limited to improvement of measures for prevention of crime such as steel grids in front of the windows, heavy gates and surveillance cameras, its impact has been increasing massively over the last 20 years. Its preventive measures aim less at retrofitting and more at the advance planning of buildings. They are implemented through a specific shaping and materialization of the architecture and its externally oriented surfaces instead of through visible defense facilities. When terrorists successfully drove a truck loaded with propane gas cans through the glass doors of Glasgow Airport in 2007, setting the terminal on fire, the UK government published guidelines for architects, planners and builders for securing new buildings with a high degree of symbolic content. They demanded that new government administration and bank buildings, commercial properties as well as public

15 Ouroussoff, Nicolai: A Tower That Sends a Message of Anxiety, Not Ambition. In: The New York Times, February 19, 2007, https://www.nytimes.com/2007/02/19/arts/design/19towe.html (June 1, 2021).

16 Ouroussoff, Nicolai: An Appraisal: A Tower of Impregnability, the Sort Politicians Love. In: The New York Times, June 30, 2005, https://www.nytimes.com/2005/06/30/nyregion/an-appraisal-a-tower-of-impregnability-the-sort-politicians-love.html (June 1, 2021).

17 See Pawley, Martin: Phantomsicherheit. In: Bruyn, Gerd de; Hundsdörfer, Daniel; Markov, Iassen et al. (Eds.): 5 Codes. Architektur, Paranoia und Risiko in Zeiten des Terrors, Basel, Boston, and Berlin 2006, p. 208–211, here p. 210.

institutions be moved back 50 meters from the street. In the case of more than two stories, brick-built façades were to be refrained from and windows were to be reduced to an maximum area of three square meters.[18] The new headquarters of the German Federal Bureau of Investigation in Berlin-Mitte is an impressive example of the conscious implementation of such architectural measures against transnational security threats (**Figure 3**).[19] In contrast to its predecessor in the Bavarian city of Pullach, which was shielded behind high walls and optically inconspicuous, the new building in Berlin with its cohesive base area and its monumental, rigidly structured concrete cube provides visible proof of its alleged impregnableness.

The adaptation of the architecture to potential threat scenarios is increasingly also determining every-day buildings without any symbolic power such as office and commercial buildings or residences. They are also given monolithic concrete or steel framing to withstand the force of an explosion. Terraces and other protruding parts which are accessible to uninvited guests are avoided. Inner courtyards and shafts instead of windows on the outer walls provide light. All niches, openings and stairwells on the outside vanish, as they could be used as hiding places for bombs. The number of potential access ways to the building is limited, making it easier to lock it up entirely at any time.

Non-Public Walls

Through such security measures a building becomes a freestanding, cohesive property without a façade. Its exterior is in no way a "public wall" pointing to the "city interior" and "expressing something that connects both sides," as the architectural theorist Fritz Neumeyer defines the façade based

18 See Wainwright, Oliver: Fortress London: The New US Embassy and the Rise of Counter-Terror Urbanism. In: Harvard Design Magazine 42, S/S 2016, http://www.harvarddesignmagazine.org/issues/42/fortress-london-the-new-us-embassy-and-the-rise-of-counter-terror-urbanism (June 1, 2021).

19 See Maak, Niklas: Architektur der BND-Zentrale. Kämpfen gegen das Unsichtbare. In: Frankfurter Allgemeine Zeitung, April 26, 2014, https://www.faz.net/aktuell/feuilleton/kaempfen-gegen-das-unsichtbare-die-architektur-der-neuen-bnd-zentrale-12911768.html (June 1, 2021).

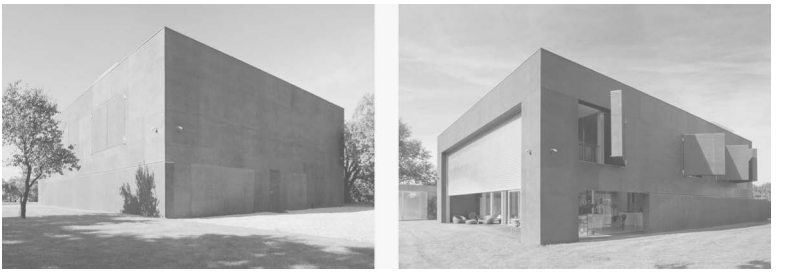


Figure 3—Jan Kleihues, Headquarters of the Federal Intelligence Service, Berlin, 2005–2019. Photo: Soeren Stache, AFP via Getty Images, 2014.

Figure 4—Robert Konieczny/KWK Promes, Safe House, near Warsaw, 2004–2008. Photos, https://www.kwkpromes.pl/en/safe-house/2248, Fig. 12 and 16 (June 1, 2021).

on Albertis *frons aedis*.[20] Instead, the bare, not clearly structured exteriors of the new security architecture point to an open, unstructured urban space, provoking a sense of forlornness and insecurity. They create spaces which are meant for running through, passing through and leaving quickly, but not for lingering. Without collateral spatial surfaces edging the public space of the city a "sense of belonging, a collective experience, a sense of unity" is lost, which can produce a feeling of identity and security.[21] It could be said bluntly that the loss of the façade as a means of social integration is not only the consequence of a new security policy of *post-democracy,* but simultaneously also it cause.[22] The overwhelming feeling of insecurity caused by complex global threat scenarios is to be countered by a type of architecture which shuts itself off in defense from the outside world or even opposes it with animosity. Its exteriors are reduced to mere tactical surfaces of visual security communication. Separated from its spatial-functional body, the façade is equipped with the symbolism of isolation, which transforms the architecture into a security icon.

The absurd radicalization of this kind of security mentality is manifested in the single-family house with the descriptive title of *Safe House* built by the Polish architect Robert Konieczny near Warsaw (**Figure 4**).[23] Mobile exteriors controlled via electric engines can transform the two-storey low rise building into a bunker with the press of a button. But first impressions are deceptive: The over dimensional strong exteriors merely consist of a steel frame filled in with mineral fiber and are thus not bulletproof. In this sense, the *Safe*

20 Neumeyer, Fritz: Was ist eine Fassade? Lernen von Leon Battista Alberti. In: Mäckler, Christoph (Ed.): Stadtbaukunst: Die Fassade, catalog for Dortmund architecture days and exhibition, no. 12 (Dortmunder U—Center for Arts and Creativity, 2010), Dortmunder Architekturheft 23, Dortmund 2011, p. 86–102, here p. 89–90 and p. 97 (translated from German by the author).

21 Neumeyer 2011, p. 89 (translated from German by the author).

22 With the term "post-democracy" the British political scientist Colin Crouch popularized the ongoing discussion about a crisis of Western democracies in 2004. The loss of sovereignty of states in view of complex global challenges and the transfer of political decisions to superordinate organizations leads to a dismantling of democratic standards according to Crouch, invoking an extensive collective sense of insecurity. See Crouch, Colin: Post-Democracy, Themes for the 21st Century Series, Cambridge, UK 2004.

23 See Schmidt, Urte: "Safe House" bei Warschau. Wandelbare Festung. In: Baunetz Wissen. Sicherheitstechnik, http://www.baunetzwissen.de/objektartikel/Sicherheitstechnik-Safe-House-quot-bei-Warschau-PL_1060461.html (June 1, 2021).

House is less a protective building than a parody of a safety obsession which has disclosed the distance between the societal elites and the less privileged.

In different dimensions and scales the new types of security architecture embody a new "fortress culture," as already described by the art historian Otto Karl Werckmeister in the 1980s in his eponymous book.[24] He uses the fortress as a metaphor for a contemporary culture which expresses itself in a continuous crisis awareness. The fortress culture acknowledges social crisis, but does not contribute to its solution. Instead, it stabilizes and normalizes it. In this sense, precisely by stressing its absolute security architecture can exacerbate the feeling of insecurity. Moreover, the fortified steel concrete walls are a constant reminder of an attack on the one hand and on the other hand they let the surroundings fall into neglect to the extent that crime and in particular fear of crime increase. The structural build-up can even induce the anticipated threat scenario by garnering the attention of potential burglars and attackers in the first place. As anticipated by the architectural theorist Martin Pawlyey, preventive security measures terminate in "architecture without style," with a low degree of identifiability.[25] The lack of experience of the architecture consolidates the feeling of unease.

But it is precisely the seemingly styleless, functional buildings which are desired by military planners in order to be able to assess the threat scenario of urban operations more optimally. Buildings with simple structure exteriors are ideal for these operations, as they facilitate the assessment of the inner structure and function. In contrast, style collages of postmodern buildings manifesting a conscious conflict between the exterior and interior prove to be problematic.[26]

Unbroken Lines

In order to counter the inevitable neglect of architecture and urban space the US Embassy on the outskirts of London opened in 2018 seemed to usher in a paradigm shift of structural security design. Simultaneous with the start of planning the US Embassy in Baghdad was completed, which

24 See Werckmeister, Otto Karl: Zitadellenkultur. Über die schöne Kunst des Untergangs in den achtziger Jahren, München 1989.

25 Pawley 2006, p. 211 (translated from German by the author).

26 See Kripa, Ersela; Mueller, Stephen: Fronts: Military Urbanisms and the Developing World, New York 2020, p. 74–77.

followed the old type of fortress architecture in an even more intense form through an isolated facility the size of an urban district (**Figure 5**). The new embassy in London countered this sample of *standard embassy design*[27] of the Bush government, calling for openness and transparency as a glass cube (**Figure 6**).[28] But the new, allegedly airy glass building only operates with visual signals of transparency and accessibility. The glass walls enveloping the cube are 15-centimeters thick and consist of a complicated construction of laminated plates intended to withstand the most powerful explosives. Moreover, the glass envelope constitutes only one of several defense rings. Additional protective measures are concealed in the artificial landscape in which the building is embedded. Following the type of a Medieval tower hill castle the 60-meter-high building stands upon an elevation, removed 30 meters from the next street and surrounded by a ditch. Supporting walls and low walls as well as plant pots and yew hedges reinforced with steel and concrete bollards form additional rings are meant to stop driving trucks. Such barriers are transferred from the surfaces of the building to the surrounding zone, with the urban space increasingly becoming an association of monitored fortress islands.

On the basis of Alberti, Robert Venturi and Colin Rowe Neumeyer stresses the necessity of a multi-layer façade: Only through spatial layering and overlayering can the façade be opened and, in this way, generate an association with the surrounding space, he argues.[29] Through overlayering the façade becomes a medium of exchange with which inner structures of the building are brought to the exterior. This creates new types of intermediate zones which interact with the public space. However, in the case of contemporary types of architecture the layering principle has a contrary function. It acts as material optimization of risk aversion and symbolic representation of power and cohesion.

27 See Houseal, Ian: Contemporary Embassy Planning: Designing in an Age of Terror, Master's Project, University of North Carolina, Department of City and Regional Planning, Chapel Hill, 2007, p. 53, https://core.ac.uk/download/pdf/210605264.pdf (June 1, 2021); American Institute of Architects: Best Practices: Adapting Standard Embassy Design to Specific Sites, contributed by the U.S. Department of State and the U.S. General Services Administration, June 4, 2005 (revised May 2007); Bureau of Overseas Building Operations, United States Department of State: Standard Embassy Design.

28 See Wainwright 2016.

29 See Neumeyer 2010, p. 95 and p. 98–99.

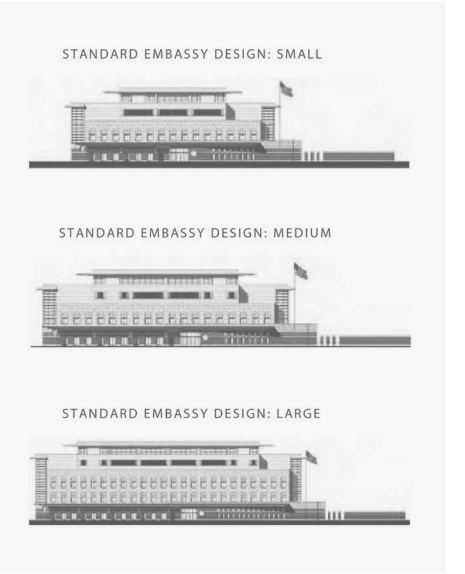


Figure 5—Bureau of Overseas Building Operations, United States Department of State, Standard Embassy Design (SED) prototypes, 2007. Renderings, https://core.ac.uk/download/pdf/210605264.pdf, p. 53, Fig. 3.10 (June 1, 2021).

Figure 6—Kieran Timberlake, US Embassy, London, 2010–2017. Photo: Justin Tallis, AFP via Getty Images, 2017.

The prototype of a modern, multi-layered security architecture type is the Pentagon, headquarters of the US Department of Defense (**Figure 7**). Each side of the pentagonal monumental building consists of five parallel building rows, the "rings," which indicate the hostility of the exterior space. The contemporary concept of a security façade also thinks along the lines of layers, even if the physical surface of a building is expanded through virtual and dynamic borders. As the targets of risk aversion are becoming increasingly mobile and vaguer, physical immobile façades and barriers seem to be of only limited usefulness now. Of course, buildings exhibited today are still protected by fortified exteriors. But it is becoming more and more frequent for moveable and reversible facilities to replace the former enclosures and protective walls. The programming of constantly shifting spatial limits and orders thus stands for another paradigm shift of the architectural security concept. What started as a visible line of reinforced building envelopes and their fortification ring of walls, bollards and strategic planting with *Rambo bushes*[30] has gradually dissolved into a nigh invisible borderline consisting of AI-capacity surveillance cameras, motor vehicle license plates recognition and facial recognition software, as well as virtual geographic boundaries. Such measures aim at the destabilization of spatial boundaries and the identification of invaders.

Virtual Enclosures

Geofencing is defined as a technology which uses the GPS coordinates or RFID signals to draw a virtual boundary in the space and on the basis of this boundary to automatically trigger specific actions. People as well as objects can be located within a geofence. Where this technology is used, the objective is not to fix an area permanently, but to create a possibility of changing the secured area at any time. The virtual security boundaries can be shifted constantly and flexibly adapted to the extent that depending on the threat scenario open and closed zones of a building or city can be separated from each other. The changes of the virtual spatial limitations need not take place covertly, their overt implementation constitutes an essential security component. Whether visible or invisible, the primary objective is to take away control over time and space from potential attackers, to take away their ori-

30 Young, Lauren: The Hidden Security Bugs in Architecture That You Never Noticed. In: Atlas Obscura, June 24, 2016, https://www.atlasobscura.com/articles/the-hidden-security-bugs-in-architecture-that-you-never-knew-about (June 1, 2021).

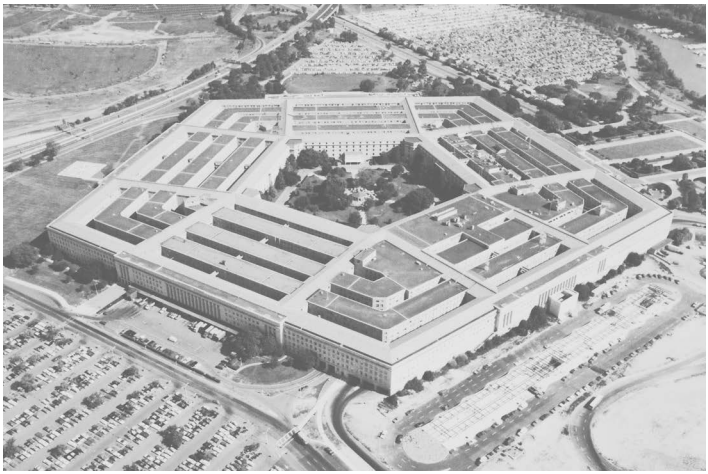
entation and to interrupt their routines. Constriction of the opponent's spatial scope of movement as well as the uninterrupted and direct localization of any suspicious target object is more important than the continuous threat aversion through physical, fortified surfaces. Instead of reacting to an external enemy with defensive architecture, each building and every location is now to be able to be transformed into a potential scenario for operations for maintenance of security and order.

The notion of elastic geofence sectors to which specific rules for intervention are attributed, can be traced back to the military-geographical concept of *kill box* developed in the early 1990s (**Figure 8**).[31] The *kill box* can be conceived of as a transparent cube of modulable size placed on an orthogonal grid field, adapted to a three-dimensional, global geodetic reference system. With this cube a battlefield is defined which can be demarcated flexibly with regard to time and space.[32] The direct purpose of a *kill box* is to authorize the air force to set up temporary battle zones and to carry out short-notice attacks against identified target objects, without having to coordinate further with the command level.[33] Every cube is declared an autonomous operation zone for those battle units in whose area of responsibility it falls. With the kill box the scene of armed conflict is re-defined as a global mobile location. In the perspective of this military concept civilian buildings and places also become dynamic surveillance and attack zones. With systems such as *geofencing*, the zones become concrete, as the virtual boundaries are not only for the purpose of flexible division of the city ground into spatial and organizational areas but act as real barriers within the physical space which trigger actions to limit movement where they are exceeded.

31 See Air Land Sea Application Center: Kill Box: Multi-Service Tactics, Techniques and Procedures for Kill Box Employment, Field Manual 3-09.34, August 2009, p. I-1, https://info.publicintelligence.net/fm3_09×34.pdf (June 1, 2021).

32 See MacGregor, James W.: Bringing the Box into Doctrine: Joint Doctrine and the Kill Box, School of Advanced Military Studies, United States Army Command and General Staff College Fort Leavenworth, Kansas, 2004, p. 43–44, https://apps.dtic.mil/sti/pdfs/ADA429320.pdf (June 1, 2021).

33 See Air Land Sea Application Center 2009, p. I-1.



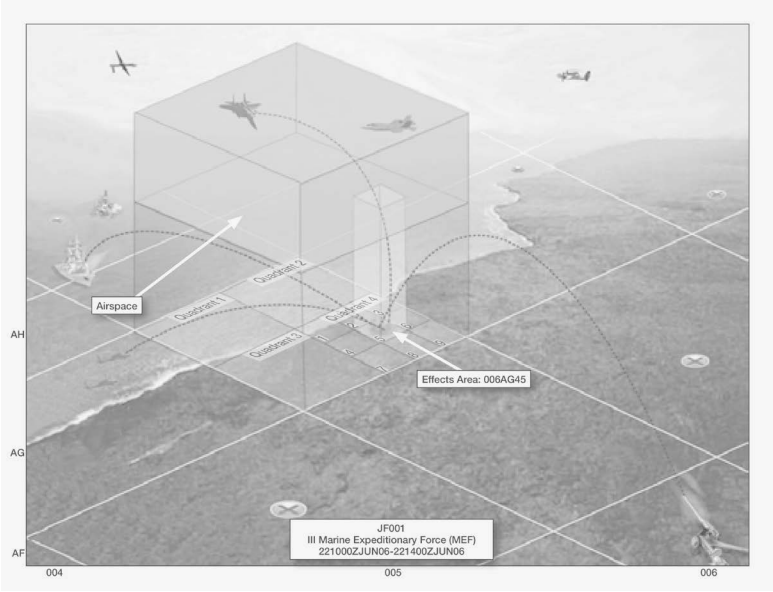


Figure 7—George Bergstrom and David J. Witmer, The Pentagon, headquarters of the United States Department of Defense, Arlington, VA, 1941–1943. Photo: Digital Vision, Getty Images.

Figure 8—Three-dimensional representation of the U.S. Air Force Kill Box system, 2008. Rendering. In: Fires Bulletin, March-April 2008, p. 39.

Predictive Architecture

When threats can emerge at anytime and anywhere security planning faces the question of how buildings and public spaces can be monitored so as to prevent incidents of damage before they occur. The answer to this is provided by *remote guarding,* a security system that combines AI-based video cameras, real time functions such as personal and vehicle recognition, facial recognition and people counting with alarm systems, surveillance centers and security services. Using this intelligent remote surveillance, suspicious incidents, characteristics or behavioral patterns are to be determined and prevented via live contact with the perpetrator. If someone lounges about for too long at the entrance of a building the system sends an alarm to the surveillance headquarters which replies with a customized loudspeaker warning such as, "You in the blue shirt, please leave,"[34] explains Ken Young of the US company Edgeworth Security. Where an unidentified person exceeds a virtual limit, AI-capacity security systems send an alarm to the police headquarters.[35] Where an employee of the monitored building uploads an image of the façade to the Internet, the Edgeworth-security system marks it within seconds, and the image is removed. Every movement, every activity in the monitored area is captured by the algorithm-based systems and analyzed and assessed in real-time. The pre-defined criteria on which the algorithms are based are mostly guided by stereotypes and external features such as ethnicity, religion or national origin, making the monitored spatial boundaries into means of racial discrimination.

Sound recognition systems ultimately perfect the total remote surveillance. A network of microphones is fixed to the façades or in the surveillance cameras. *ShotSpotter* of the eponymous Californian company is capable of identifying shooting sounds, locating these, specifying the most probable type of weapon used and of automatically sending all this information to the relevant police departments.[36] *FlexZone,* a fence-mounted sensor system by the Canadian company Senstar in contrast detects any attempt to cut, climb

34 Sullivan, Paul: Can Artificial Intelligence Keep Your Home Secure? In: The New York Times, June 29, 2018, https://www.nytimes.com/2018/06/29/your-money/artificial-intelligence-home-security.html (June 1, 2021).

35 See Sullivan 2018.

36 See ShotSpotter, https://www.shotspotter.com/ (June 1, 2021).

over or otherwise get around a fence.[37] Potentially, the environments can be filtered and evaluated by such systems also with regard to other sounds, snatches of conversations or keywords, with the consequence that the surveillance mechanisms can be expanded to previously uncontrolled areas.

In combination with virtual enclosures, this extensive form of surveillance aims at increasing the potential for threat aversion of exterior walls and enclosures. At the same time the technology can be used independent of physical building façades or property boundaries in order to define and control flexible virtual activity zones with limited accessibility. This is perhaps their most important objective, viz. to divide up the city into an "endless series of securitized passage points (either visible or invisible)".[38]

Ultimately, the aim of the new security architecture types is to "come before the event" using the technology, i.e., to be one step ahead of attackers and invaders to a certain extent. The connection and assessment of diverse data as recorded by police departments, private security providers and biotechnology companies are playing an increasing role in this context. Just recently, such a connection of different data sources and applications was able to be disclosed in the case of the US start-up Clearview AI. The company produces facial recognition software with which it has already stored over three billion images of human faces and their profile data from freely accessible websites and platforms such as Facebook, YouTube or Instagram. Numerous US departments and security services have already used this technology for identification and prosecution of suspects.[39] Connected with the AI-controlled surveillance systems in buildings and in the public space, possible whereabouts and other suspicious acts by these suspects can be identified.

The objective of a similar algorithmic panopticon is also the connection of intelligent surveillance systems by private security companies with procedures of *predictive policing,* a data analytical forecast technology for supporting police preventive work which has been widespread primarily in

37 See Senstar: FlexZone: Locating Fence-Mounted Intrusion Detection Sensor, 2020, https://senstar.com/products/fence-sensors/flexzone/ (June 1, 2021).

38 Graham, Stephen, quoted from: Lobe, Adrian: Bedrohte Stadt. In: Neue Zürcher Zeitung, November 24, 2015, https://www.nzz.ch/feuilleton/kunst_architektur/bedrohte-stadt-1.18651386 (June 1, 2021) (translated from German by the author).

39 See Hill, Kashmir: The Secretive Company That Might End Privacy as We Know It. In: The New York Times, January 18, 2020, https://www.nytimes.com/2020/01/18/technology/clearview-privacy-facial-recognition.html (June 1, 2021).

Figure 9—Predictive policing systems identifying hotspots where crime risk is the highest, Norway. Illustration: Birgitte Blandhoel, 2013, http://volta.pacitaproject.eu/big-data/ (June 1, 2021).

Figure 10—Blacklisted debtor displayed on a LED screen, Taishan city, Guangdong, China. Photo: Taishan Government via WeChat, 2018, https://theconversation.com/chinas-social-credit-system-puts-its-people-under-pressure-to-be-model-citizens-89963 (June 1, 2021).

the US since the early 2010s (**Figure 9**).[40] Within the scope of preventive police work probabilities for the incidence of a crime at specific locations at specific times are calculated, in order to respond with the corresponding police measures. But not only in police work, but also in the private security industry predictive analytics tools are used. They provide legitimacy to use of even more limitation and monitoring systems in areas with a high risk for victimization of places and people which take advantage of all possibilities of data collection and information processing. In this way, the protective function of architecture is ultimately outsourced to major security companies.

Gradually, AI-capacity systems decouple themselves from the sensory perception of concrete material spaces and impact the use and experience of buildings and urban spaces with a high degree of intensity. The American sociologist and design theorist Benjamin H. Bratton accurately described this phenomenon with the model of a stack: In his book *The Stack* from 2016, he explores a new governing architecture in the form of a globally comprising stack of digital systems linked to each other seamlessly penetrating all areas of social life, a coherent, constantly changing megastructure whose engine is the digital economy.[41] Physical-material or territorial boundaries have become useless in this megastack.

Visual Pillories

In such a space in which the architecture is increasingly de-architecturalized, the façade is being re-discovered as the tactical surface of visual deterrence communication. Thus, for example, in authoritarian states such as China it is becoming a flat image screen which turns the building into a type of modern pillory and the city into an open-air movie theater for public sanctioning. With the Chinese social credit system, a totalitarian, omni-surveillance system regulating behavior is being pushed entirely over social life and organizes the public space in the form of visual mega-symbols. People who break the rules are shamed by having high-resolution portraits projected on giant LED screens on façades together with their surname and part of

40 See Knobloch, Tobias: Vor die Lage kommen: Predictive Policing in Deutschland, Gütersloh 2018, p. 9–10, https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/predictive.policing.pdf (June 1, 2021).

41 See Bratton, Benjamin H. : The Stack: On Software and Sovereignty, Cambridge, Mass. 2016, p. 52–55.

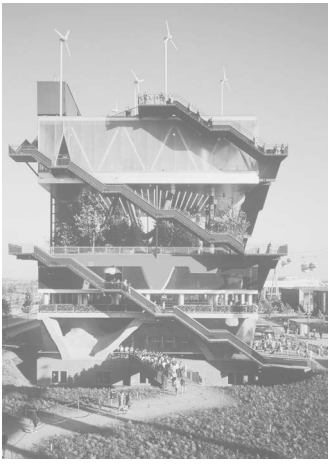


Figure 11—Images of jaywalkers displayed on a screen at a crossroad equipped with cameras and facial recognition technology, Xiangyang, China. Photo: Gilles Sabrié, 2018, https://www.nytimes.com/2018/07/24/business/dealbook/china-facial-recognition.html (June 1, 2021).

Figure 12—MvRdV, Expo 2000 Netherlands Pavilion, Hannover, 2000. Photo, https://architizer.com/projects/expo-2000-netherlands-pavilion/ (June 1, 2021).

their personal ID number (**Figure 10**). This type of programmed media façades acts both as sanctioning and prevention systems aimed at protection against internal enemies of the state. The nightmarish scenarios are embedded in a collection of advertising signs and blips, which cover the principal fronts of commercial buildings in the megacities of China. Thus, the public parading of delinquents on electronic screens is part of the urban entertainment of the consumer and leisure society.

In a cynical way, the Chinese *walls of shame* invert the idea of the façade as public wall. They are tools of public sanctioning and simultaneously function as supporters of advertising messages, whereby they reach a new climax in the militarization of the urban.[42] Instead of signaling accessibility and referring to a common space, the façade equipped with surveillance technology can be regarded as a means of government power through which every action can be recorded, assessed, rewarded or punished. This applies both to free-standing fortifications as well as to freely hanging screens in the space. In both cases the façade is reduced to a tactical, defensive or disciplining envelope.

Security-promising contemporary architecture spans itself equally between two poles. One pole is architecture that has the goal of making itself invisible. It blends itself with the surroundings in the form of glass or mirror façades, low walls or hedges or is even completely virtual and nigh immaterial. The other pole is occupied by such architecture which captivates the eye and intends to defeat the threat in this way. They suggest strength with traditional symbols of stability or triumph over the breach of rules with theatrical symbols. In both cases the architecture becomes an effective medium of appeasement rhetoric in culture of insecurity marked by authoritarianism which mutes as well as stokes fears.

Eyes on the Street

Given the collective security obsession in authoritarian and neoliberal systems the question of counter-concepts creating a sense of security other than through isolation, surveillance and public sanctioning must be posed. A look back at unconventional ideas of crime prevention in the 1960s can be

42 The entanglement of consumption and pillory can be seen in the screens placed at the crossings in Xiangyang on which pedestrians are shown jaywalking (Figure 11). Such roadside screens are customarily used for digital outdoor advertising.

helpful in this context.[43] In her book *Death and Life of Great American Cities* from 1961, the American architecture critic Jane Jacobs pointed to the concept of informal, voluntary social control, which is activated by the invigoration of public spaces. With her vision of urban society as an institution of informal social control she counters the argument that criminal acts and fear of crime can be reduced by greater police presence. Instead, with her mantra "eyes on the street"[44] Jacobs propagated a coherent security concept for the social space according to which co-determination and autonomy of the urban society are to be encouraged in order to reduce surveillance of urban areas by police departments. The prerequisite for this is urban diversity which causes an intensive use of public spaces. Appropriation and social production of urban spaces in turn guarantee a high degree of social control and contribute to the security of streets and places. According to Jacobs, functional socially mixed urban areas are also safer because they encourage contacts, thus strengthening the identification of the urban users with their surroundings. These ideas are currently being re-discovered within the context of debates on *smart cities:* To bring back human presence in urban spaces offering numerous automated services and products, is regarded as one of the most significant security measures in future digital cities.[45]

Walkable Façades

Looking at contemporary experimental architecture and its façades, it can be observed that it indirectly resorts to Jacobs' idea of informal social control by integrating public uses in spacious and walkable building envelopes. At first glance, the new buildings look as if they had rid themselves of the protective, closed façade. Whereas hitherto fortified façades had separated exterior and interior like a cut, and the private from the public, in the

43 See Schubert, Dirk: "Open City"—From "Eyes on the Street" to "Zero Tolerance". Jane Jacobs' Visionen einer sichereren Stadt. In: Häfele, Joachim; Sack, Fritz; Eick, Volker et al. (Eds.): Sicherheit und Kriminalprävention in urbanen Räumen. Aktuelle Tendenzen und Entwicklungen, Wiesbaden 2016, p. 47–68, here p. 48.

44 Jacobs, Jane: The Death and Life of Great American Cities, New York 1961, p. 54.

45 See Johnston, Elizabeth: Wir haben Jane Jacobs' Grundkonzept vergessen. Im Gespräch mit Brigitte Schultz. In: Bauwelt 6, 2017, StadtBauwelt 213, p. 18–23, here p. 23.

new buildings they seem to dissolve in favor of open, accessible labyrinths.[46] The façade as a cut in space is declared obsolete. Instead, it becomes a material interface, a transition medium between interior and exterior. Private and public space are no longer separated by walls and doors but by an open structure with a number of uses and simultaneously connected to each other. The building then starts with a deep room in which guest and host, service provider and customer, stranger and resident meet and interact.[47] The question as to how far one can enter the building is not decided with space-separating walls but is re-negotiated every time.

A prototype precursor of such open buildings was the Netherlands Pavilion by the Rotterdam architecture firm MvRdV at the World Expo in Hanover from 2000 (**Figure 12**).[48] Winy Maas, Jacob van Rijs and Nathalie de Vries stacked Dutch symbol landscapes on top of each other in an eight-storey building without external walls and organized the levels as volume with diverse height scales and fluid spatial connections. Their architecture paved the way for the idea of verticalization of the public space which twenty years later was picked up again by the architectural office querkraft in Vienna: In their current design for an Ikea building the architects suggest a simple building box surrounded by a spatial frame with public uses and which closes on top with a souk-like roof garden (**Figure 13**).

Even more radically, the Iranian architect Farshad Mehdizadeh pursues the idea of the publicly useable building envelope: In Tehran he re-builds an unsuccessful nine-storey shopping center by enveloping it with an open structure out of common and access areas (**Figure 14**).[49] Streets extend into the architecture: pedestrian crossings, squares, parks unfold into a public space; the former protective façade consisting of a separating wall becomes its own space which is equally as big and deep as the core structure. This type of structure actually forces the visitors to deal with their surroundings and

46 See Maak, Niklas: Zutritt erbeten. In: Frankfurter Allgemeine Zeitung, February 12, 2020, https://www.faz.net/aktuell/feuilleton/wie-architekten-aus-fassaden-einen-eigenen-raum-machen-16624258.html (June 1, 2021).

47 See Maak, Niklas: "Ein neues Verständnis von Nähe". Im Gespräch mit Gregor Becker. In: Ping! Für mehr Sinn und Verstand in der Redaktionellen Gesellschaft. Der Newsletter der Looping Group, October 19, 2020, https://looping.group/en/ping/artikel/harvard-professor-niklas-maak-ein-neues-verstandnis-von-nahe-5269581 (June 1, 2021).

48 See MVRDV, Expo 2000, https://www.mvrdv.nl/projects/158/expo-2000 (June 1, 2021).

49 See Farshad MehdiZadeh Design, Tehran Eye, https://fmzd.co/projects/detail?id=5 (June 1, 2021); further examples: Nicolas Laisné Architectes, https://nicolaslaisne.com/en/projects/ (June 1, 2021).

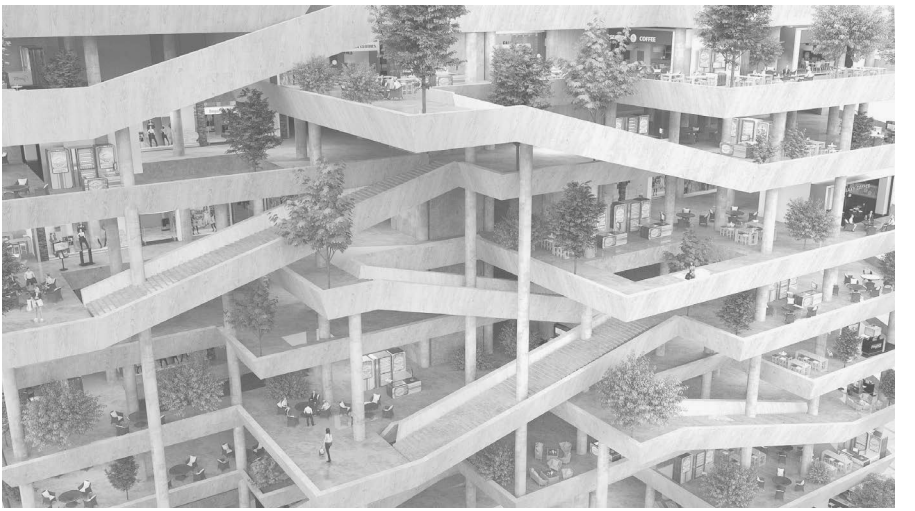


Figure 13—querkraft, Ikea City Center, Wien, 2020. Rendering, https://www.querkraft.at/projekte/ikea-city-center#&gid=lightbox-group-756&pid=5 (June 1, 2021).

Figure 14—Farshad MehdiZadeh Design, Tehran Eye, Tehran, 2019. Rendering, https://www.archdaily.com/931944/fmzd-transforms-an-existing-concrete-structure-in-tehran-into-a-contextual-shopping-mall (June 1, 2021).

to exert incidental social control, as it constantly guides their views between the interior and exterior.

Whether the new façade-less buildings will keep their security promises remains to be seen. Initially, they only provide images of increased accessibility and keep the ideal of an open city alive. Both the new Ikea building and the Tehran shopping center are financed privately, and that is why it is dubious whether their open façades will be accessible to the public at any time. However, the question as to whether profit-oriented building projects which open the façades for common use are not already products of cultural capitalism and hence ineffective as criticism of the neoliberal city and its dominant security discourses is even more quintessential. Especially in the case of consumer buildings for globally producing enterprises or shopping malls in authoritarian systems it can be suspected that the walkable façade is merely a simulation of city and public with the aim of better marketing of goods. This would level the antagonistic, political potential of the public space.

City of Disobedience

In conclusion, in view of simulated urbanity under the diktat of economics, the question must be posed as to which concepts of citizens' security would apply outside of authoritarian and neoliberal control techniques. What forms and strategies of urban and algorithmic disobedience can be developed which do not risk being taken over by esthetic economics, thereby losing their effect? In order to deal with this question openly, the contrasting concepts of a secure city will be compared with the topics of *obey* and *disobey* in a more concentrated manner and discussed.

The physical-digital security constructs presented here can be interpreted as a new architecture of obedience which will fundamentally transform the organization of future cities. Buildings and public spaces will be shaped and materialized in such a way that they are able to be registered, monitored and where necessary, locked by police authorities, private security services and autonomously acting digital systems without any trouble. The city of obedience consists of isolated architectural objects with fortified surfaces and an extensive vacant, but intensely controlled surrounding space which accelerates the urban fragmentation. With the progressive militarization of the city, all urban spaces lacking specific purposes of use and predetermined significance will gradually vanish. They are the counter-spaces of

urban order in which unique, strange, cryptic and boundary-pushing actions can occur unobserved. Instead of opening up such potential-laden spaces to creative appropriation and utopian occupation, the city of obedience disintegrates into individual security passages with a scaled degree of publicness.

Through the expansion of border and control systems the urban social space becomes increasingly homogenized and regulated, whereas in contrast the practices for the restriction of access and participation become increasingly diverse. The visible protective walls and architectural forts are expanded through invisible boundaries of AI-capacity monitoring systems, audio visual detection sensors and virtual fences. The algorithms embed themselves subtly and with little transparency in the public space, impacting social interactions and individual modes of behavior there. They can be programmed to take racist decisions on the basis of which government and private security staff operate. Through algorithms, urban areas can be designated risk areas legitimizing increased police intervention. In this way, the city is transformed into a closed space for disciplining, discrimination and sanctioning. Not only is the protective function of architecture outsourced to security technology and Internet companies through digital surveillance, but legislative and legal implementation authority of the government is transferred to globally operating companies.

Given this advancing production of hyper-determined urban spaces ruled by security and efficiency empires, the question of counter-concepts of the city must be posed. What strategies of disobedience aimed at an open city can be developed? A potential form of disobedience being proposed here is a concept of urban security based on a critical-emancipatory practice of urban development whose prerequisite is social cooperation. This kind of socially-driven idea of urban resilience against crises and risks was formulated by Jane Jacobs in the 1960s, when she propagated urban mixed-use development and living neighborhoods for the creation of a positive type of social control of public space. Her call for the opening of urban spaces and cooperation in the city and society act as fundamental criticism of post-democratic security obsessions from contemporary commons movements. Resistance against urban and algorithmic surveillance can, however, only be kindled if the concept of the open city can be extrapolated to the digital city. For example, there is a strategy for disobedience in the demand for all city users to have free access to any digital data being collected which relates to their identity, abode or movements within the urban space. This means that these data are no longer

stored centrally and able to be used by profit-oriented platforms or authoritarian regimes.[50]

Since 2016, information on peak visitor frequency times at a public space or store has been shown on online maps by the US company Google LLC, which are calculated using the aggregated data of local users. The objective of this is for the residents and visitors to be better informed about their environment. However, this information does not serve the purpose of invigorating an urban place in the spirit of Jane Jacobs and thus of guaranteeing its security, but on the contrary leads to the avoidance of interpersonal meetings. This application is a classical neoliberal control technology which regards unplanned social contacts as obstacles for individual efficiency aspirations.[51]

It is thus not enough to open up architecture and urban spaces to diverse urban uses or to make data freely accessible, but it is necessary to reflect critically and change the values of its clients, developers and users. This too, would be a strategy for potential disobedience. The objective of resistance programming would have to be to develop new areas of cooperation and collective action in the urban-digital space which are democratically legitimized and decommercialized. Only then will architecture and digital tools be able to develop their potential for the informal social securing of the city.

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