javni prostor

miha dešman

Če boste v Ljubljani nekoga na ulici vprašali, kje je Adamič – Lundrovo nabrežje, bo verjetno samo zmignil z rameni, če pa ga boste vprašali po Plečnikovih tržnicah, bo zagotovo vedel, kje so. Ljudje si pogosto zapomnimo mestne prostore po vsebini, po hišah ali po ljudeh, ne po uradnih poimenovanjih. Vsebine tkejo mesto, stavbe in mestne ureditve pa gradijo prostor tem vsebinam, navznoter in zlasti navzven, s tem, da oblikujejo javni prostor.

Javni prostor je po definiciji[1] prostor ali območje, ki je dostopno vsem, ne glede na raso, spol, socialni status, starost … Zanj ni treba plačati vstopnine, niti niso tisti, ki vstopajo, podvrženi kakršnikoli segregaciji. Po vsebini pa je javni prostor mesto, kjer se odvija (uresničuje) naše javno življenje, pa tudi vsaka oblika urbanosti. Je osnovni »material« mesta in skupnosti, in kot tak pogoj za socialno in družbeno dimenzijo bivanja. Širina pojma seveda sega preko okvira fizičnega prostora. Ute Angelika Lehrer v svoji razpravi[2] deli javni prostor na fizični, socialni in simbolni. Fizični je najbolj očiten in se navezuje na pojme, kot so ulica, trg, prostori za piknike, plaže itd. Njegova arhetipska podoba je italijanski trg, kjer je veliko ljudi.

Socialni prostor se ustvarja z dejavnostmi, ki se dogajajo v njem, in mu na nek način določajo »lastništvo«. Te dejavnosti se lahko odvijajo kjerkoli; ne le na krajih v javni lasti (trgih, ulicah, parkih …), pač pa tudi v zasebnih prostorih (kavarnah, restavracijah, barih, pa tudi časopisnih rubrikah, namenjenih pismom bralcev, ter v ostalih oblikah medijev in komunikacij (na primer svetovnem spletu) pa vse do zasebnih domov.[3]

Simbolni javni prostor pa ustvarjajo dejavnosti ljudi in njihovi kolektivni spomini, zato ga je teže označiti, saj obstaja tako v realnosti kot v domišljiji. Gre za izkušnjo, ki se vpiše v kolektivno zavest skupine ljudi. Taka izkušnja, čeprav kratkotrajna, se lahko spremeni v mit in postane del skupne zgodovine. Lahko gre za zgodovinske dogodke, obiske pomembnih osebnosti (papež, ameriški predsednik, angleška kraljica …), lahko za zmagoslavja ali za katastrofe, lahko pa so simbolni prostori tudi intimnejši, kot npr. zbirališča določenih skupin ljudi, kavarne, bari ali ulični vogali. Vedno pa so posredi kolektivna doživetja in močna čustvovanja.

Javni prostor je tisti, ki mesto strukturira, mu daje prepoznavnost. V njem se da intervenirati, tako zasebno kot v imenu skupnega oz. javnega interesa, in pričakovati določen odziv. Zato je javni prostor postal eden od osnovnih pojmov kritične teorije sodobnosti, tako v filozofiji, (urbani) geografiji, umetnosti, kulturnih in socialnih vedah ter urbanizmu.

Javni prostor pomembno vpliva na naše življenje, saj je podaljšek intimnega osebnega prostora in okvir, v katerem se odvija javno življenje. Kvaliteto življenja lahko omogoča in spodbuja, kot npr. v idiličnem okolju nekdanje mestne ali vaške skupnosti, lahko pa je vir frustracij, npr. v predmestjih, kjer smo oropani možnosti javnega udejstvovanja. Seveda so se v sodobni metropoli načini javnega življenja pluralizirali in razpršili. Najprej je tu še vedno tradicionalni »urbani teater«, ki pomeni za različne družbene skupine načine kazanje v javnosti, npr. za kulturne ali politične elite, ali pa teenagerje, ki v mesto hodijo kot igralci na oder. Poleg klasične urbane funkcije - druženja in razpravljanja, kot pri starih Grkih - so se vzpostavili novi, raznoliki, velikokrat hedonistični načini uporabe javnega prostora. Tradicionalnemu javnemu prostoru so se pridružile nove oblike, ki jih najdemo povsod: fitnes centri, gejevske skupnosti, urbani safariji, prostori za žuriranje, pa šoping moli, seks industrija, prostori različnih svetovnonazorskih skupnosti, tematski parki itd.

V današnjem času se pomen javnega prostora na novo oblikuje tudi v pogojih njegove eksplozivne razširitve v globalizirani svet informacij. Razmerje med javnostjo in privatnostjo se z novimi tehnikami in mediji - televizijo, brezžično telefonijo, videom, video nadzorom, sateliti - pospešeno spreminja. To pa ni nujno negativno, saj odpira nova polja kompleksnih interakcij javnega in privatnega, globalnega in lokalnega, in nove možnosti delovanja civilne sfere. Razvijajo se nove strategije, ki sferi javnega omogočajo rezistenco in celo ponoven razcvet. Boj za javni prostor je eden od najmočnejših vzgibov socialno osveščenih gibanj, intelektualnih zavzemanj za svobodo in pravičnost, sodobnih umetniških praks ipd.

Vizualni umetniki so začrtali nove meje, ki določajo razvoj javnih prostorov. Velikokrat nas prav oni opozarjajo na pomen fizičnega javnega prostora. Javno življenje v informacijski dobi se sicer deloma res seli v medijski prostor, a ostaja kvaliteta življenja neločljivo povezana s fizičnostjo telesa in s tem tudi prostora, v katerem se telo (in duša) giblje ta. Naravni zagovornik javnega prostora je civilna družba, ki ga potrebuje kot pogoj za obstoj. Alternativna kultura potrebuje Rog in Metelkovo, otroci potrebujejo Tivoli, zaljubljenci potrebujejo Trnovsko nabrežje z vrbami. Javni prostor, ki je v zadnjem desetletju nastal ob Ljubljanici, je ponovno oživil vsaj del zamrlega urbanega življenja v Ljubljani.

Javni prostor načeloma določa perspektiva pešca. Avto je zanj tujek in pomeni vdor s pločevino obdanega zasebnega prostora. Problem Ljubljane je, da še zdaleč nismo dojeli te njegove rušilne vloge. Avto je v očeh večine nesporni kralj prostora. Zato ga kot ikono sodobnega časa najdemo na zelenicah in pločnikih, pa tudi na bilbordih. Urejena mesta so avte pospravila pod zemljo, jih ustavila pred mestnim središčem in nadomestila z javnim prevozom. To je ponovno vzpodbudilo razcvet javnega prostora.

Kot odnos med javnostjo in zasebnostjo se tudi odnos med javnim in zasebnim prostorom v zadnjih desetletjih pospešeno spreminja, seveda v večini primerov na škodo javnega prostora. Javni prostor se privatizira. Privatizira se

na veliko načinov. Prisvaja si ga kapital, ki vdiranje trži. Osnovna značilnost javnega prostora – njegova splošna dostopnost za vse – je ogrožena z naraščanjem kontrole in varovanja.

Socialna segregacija je drugi napad na javni prostor. S prisvajanjem, nato pa z izključevanjem, nadzorovanjem, selektivno dostopnostjo, s fizičnimi prepovedmi ali na bolj subtilne načine, na podlagi rase, socialnega statusa, finančne sposobnosti, intelektualnega testiranja itd., onemogoča socialno interakcijo.

Privatizacija mesta, prostora običajno poteka izven oči javnosti, hkrati pa javnost postane blago široke potrošnje. Pa vendarle privatizacija javnega prostora ni enosmeren proces, ki bo v končni posledici prinesel njegovo odmrtje. Privatni prostor je lahko javni prostor, npr. v šoping molih.

Tu se pojavi vprašanje o tipologiji javnega prostora. Javni prostor v javni lasti, ali privatni javni prostor – kakšna je razlika?

Razlika ni toliko v lastništvu, kot v tipu uporabe, v tipu urbanosti. V šoping mol, v Ljubljani npr. v BTC, greš zaradi programa, ciljno; v mesto greš svobodno, brezciljno, kot flaneur.

Naslednje vprašanje je, ali niso šoping moli prostor, ki poneumlja, ki je totalitaren, ki prikriva pravo naravo stvari? Menim, da je prostor šoping mola surogat, nadomestek javnega prostora. Kontroliran, usmerjen, nadzorovan, nesvoboden prostor. Ker je zaseben, v njem ne veljajo pravila javnega prostora. Zato sledi vprašanje, ali je v prostoru, ki je narejen in služi zasebnemu interesu, možna svoboda? Odgovor bi lahko bil: možna je, a ne katerakoli svoboda. Tudi svoboda je individualizirana. Če vem, sem svoboden? Ne grem v BTC in sem svoboden?

To je politično vprašanje. Ali je urbanost le urbanost potrošnika, tistega, ki ima denar? BTC je mesto avtomobilov, karikatura mesta, labirint krožišč za brezkončno kroženje avtov v bebavem ritualu iskanja parkinga. Iz zapovedanega uživanja se sprevrača v nasprotje, v simulaker uživanja, ki je v resnici dolgčas ali celo muka. V končni fazi se izkaže, da v to kategorijo surogatov in simulakrov javnega prostora sodijo tako šoping moli, tematski parki[4], pa tudi t.i. »Non Places«[5], kot so banke, bolnišnice, letališča, avtoceste itd.

Prostor šoping mola je seveda tendenciozen, saj iz državljanov dela potrošnike. Pravi javni prostor pa, kot smo implicitno povedali že na začetku, ni tendenciozen in omogoča mestni oz. urbani način življenja.

Tekmovanje mest se odraža tudi v obravnavanju javnih prostorov. Vprašanje je, ali tip javnega prostora določa status mesta? Dokaz za pravilnost te trditve je Barcelona, kjer traja renesansa javnih prostorov že desetletja, pa Pariz, Berlin, Amsterdam in tudi mnoga druga španska, francoska, holandska, skandinavska mesta, itn.

Najbolj uspešna in propulzivna mesta so tudi vodilna v oblikovanjih javnih prostorov. To velja tudi za mesta z močno in živo tradicijo javnega prostora (italijanska mesta s piazzami in ulicami, nemška in skandinavska mesta s peš conami, tudi Ljubljana s Plečnikovimi ureditvami …)

Javni prostor je tudi dodana ekonomska vrednost. V bližini pomembnih javnih prostorov so cene nepremičnin višje. To velja zlasti za zelene javne prostore – parke, gozdove, kjer so ljudje pripravljeni plačati več, da bi lahko živeli v njihovi bližini.

Uspešnost javnega prostora ni prvenstveno odvisna od estetskega oblikovanja, niti od lastništva, pač pa od kombinacije kvalitet medsebojnih interakcij med uporabniki ter lastniki in upravljavci.

Globalizirana arhitekturna estetika, ki se prebija skozi developerske projekte, ne prispeva k kvaliteti javnih prostorov. Dokaz za to trditev je BTC, opevan kot »novi javni prostor, mesto nakupov«, ki je, kot rečeno simulaker, karikatura mesta.

Primeri javnega prostora v Ljubljani so torej raznovrstni. Njeni tradicionalni javni prostori so s Plečnikovimi ureditvami postali paradigmatični model arhitekturne vizije idealnega mesta, ki ga sestavljajo arhetipski javni prostori.

Za razliko od časa graditve Plečnikove Ljubljane pred drugo vojno, je danes za Ljubljano značilen tudi primanjkljaj javnega prostora. Kongresni trg, kjer smo sprejeli npr. Clintona v nalivu, je še vedno parkirišče. Trg Republike, kjer smo ustanovili državo, je prav tako parkirišče. Južni trg ni realiziran. Privatizacija javnega prostora se kaže v zasedanju nabrežij in trgov z mizicami in senčniki, ki natrpane z mladino in turisti sicer polnijo žepe gostincem in posredno najbrž tudi mestno blagajno, ne prispevajo pa k javnosti. Nima pa Ljubljana mestne kavarne s časopisi in hrano, kot jih imajo »prava« mesta. Ljubljana je nekoč take kavarne imela, danes pa jih imajo mnoga mesta, ki nimajo take lastne urbane tradicije.

Simbolno je to znak, da se pri nas še ni zares pričela renesansa javnega prostora v mestu, drugje pa se pač je. Očitno je naša urbana kultura nizka, ali pa je sploh nimamo. Na mesto gledamo individualistično, ne želimo si zares živeti v njem. Ne razumemo, da pomeni biti meščan tudi nek specifični javni performans.

Temu sta prilagojeni tudi politika urejanja javnega prostora in zakonodaja. Ves javni interes pri urejanju prostora je obešen na varovanje kulturne dediščine. To, konservativno, stališče je absolutno premalo. Javni interes se na ta način udejanja skozi prepoved, zaviranje. Sedaj je investitorjem prepuščeno, da igrajo svojo igro, ki jo pravzaprav uravnoteža zgolj še, kot rečeno, zaščita kulturne dediščine in pa civilna javnost, strokovna in druga. To pa je tudi za investitorje negotova situacija, v kateri morajo ogromno tvegati. Javno mnenje lahko zelo škodi projektom, spomnimo se na primer Kosovelovega spomenika.[6]

Vsi investitorji so prestrašeni, in skušajo odigrati svojo igro v zakulisju, da bi se tako izognili ali pa bi projekte spravili vsaj preko »kritične točke«, kjer je vpliv nanje ni več mogoč. Boj za javni prostor je zato velikokrat tudi neuspešen, saj se ozavestimo prepozno. Prav zadnje izkušnje z gradnjo predorov ali nakupi orožja kažejo, kako se »javno – tajni« posli izjalovijo prej ali slej, škoda, ki je nastala, pa je zelo težko popravljiva. Za Ljubljano bi lahko pomenilo uresničenje nekaterih izmed takih projektov katastrofo, saj bi uničili nekatere njene bistvene kvalitete. Negativni primer špekulativne zlorabe in izigravanja javnega interesa je npr. gradnja stanovanjskega bloka v Grajskem hribu, podobno nevarni so nekateri še neuresničeni projekti, kot je pritisk na Tivoli, pa Novi Kolizej itn.
So pa v tej ljubljanski urbani predstavi tudi bolj optimistični toni. Grad postaja z vzpenjačo glavna atrakcija mesta, katere vrednost je neprecenljiva, zato ne razumem pritlehnih kritik, da gre za zgrešen projekt, za katerega je škoda porabljenega denarja. Ne vem, če je bil ves denar porabljen namensko in pregledno, je pa projekt Ljubljano postavil za stopničko više v primerjalni lestvici zanimivih mest. Ko bi le znali izkoristiti potencial, ki ga ima grad kot krona mesta, bi lahko zadihali malo bolj mestno.
Projekti za javne prostore ob Ljubljanici, Gradaščici, na Špici, za nove parke, peš ulice, dodatne površine, ki jih financira in vodi mestna uprava, so potencialni kvalitetni mestni javni prostori. Tudi razstava in ta številka revije ab, Vizije 3 – odprti javni prostor v Ljubljani, se ukvarjata z nekaterimi med njimi.
Arhitektura in urbanizem sta, v kolikor sta kvalitetna in javno transparentno urejena, pomembna stebra zagotavljanja javnega interesa in zlasti javnih prostorov, in tudi obrambe proti slabi praksi, nepravilnostim, privatizaciji in tajkunizaciji. Seveda arhitektura in urbanizem sama ne moreta rešiti problema odmiranja javnega prostora.
Imata pa možnost in odgovornost, da tudi pri investicijah, kjer je osnovni motiv dobiček, sodelujeta s politiko in neodvisno javnostjo v usmerjanju kapitala, da poleg dobička investitorjev upoštevata tudi javni interes in zagotovita kvalitetne prostore za prebivalce. Ta cilj mora biti opredeljen v vseh ravneh organiziranosti družbe, od zakonodaje do političnih programov, strokovnih dokumentov, vzgojno izobraževalnih programov itn.
Vedno znova se moramo spraševati o vlogi in pomenu arhitekturne stroke danes. Čeprav je vprašanje navidez preprosto, je odgovor težak. Že premišljanje o smeri razvoja stroke nas pripelje od ambicij po profesionalnosti do samokritike, nujnosti etične prenove poklica in celo do dvomov o smislu lastnega početja. Neizogiben je sestop iz udobnega, nekonfliktnega sanjskega sveta avtonomne umetniške prakse. Vedno znova je potrebno utemeljiti arhitekturo kot zbir znanj in kompetenc, ki ne zadovoljijo le potreb klientov pač pa predvsem tudi javni interes.

Arhitekti oblačijo mesto z arhitekturo. Ne morejo pa sami kreirati javnega prostora. Veliko bolje je, če ta nastaja v participaciji z lastniki in uporabniki, le tako bo lahko izpolnjeval svoje demokratično poslanstvo.

Opombe:

1 www.wikipedia.com, Public space

2 Ute Angelika Lehrer, Ali je za javni prostor še prostor? Mesta, ki se privatizirajo, in privatizacija javnega, v: O urbanizmu - Kaj se dogaja s sodobnim mestom?, Krtina, Ljubljana: 2007

3 Ibidem.

4 Glej: Miodrag Mitrasinović, Provizorična polemika, model tematskega parka in ameriška urbana krajina, ab 155-156, 2002

5 Marc Augé, Non-Places: Introduction to an Anthropology of Supermodernity,1995

6 Poskus postavitve javne skulpture v javni prostor je propadel, ker ni upošteval javnosti.

digest

Page 1

Miha Dešman
Visions

nataša koselj

docomomo slovenija 2006-2008 Manjka!!!!

Page 1

Ola Wedebrunn
Conrete
The Use of Concrete in History and Today

We see, hear, smell, feel and taste the qualities of the materials which surround us. But emotions and ideas are also part of our reality, whether it is virtual or tangible. Every specific material is made up of matter, and matter is also the means by which we express ourselves when we create new objects and a new environment. We describe the properties of this matter and allow ourselves to be influenced by its qualities. From this defined matter specific materials with specific qualities and properties are derived.

Concrete is the material of change, of metamorphosis. Like a chameleon it appears in different guises and in different connections. The assessments of this substance have changed over the years. Sometimes, in the early Modernist period, it has been considered a miracle material which would solve all the problems of the building industry. Sometimes it has been seen as representing inhuman large-scale building projects, sharply criticized by the Postmodernists.

In many ways concrete is a universal material. On the one hand it can take any form and shape, on the other it is made up of raw materials, lime and silicate, which are so commonly found that they can be extracted and produced anywhere.

The concrete of antiquity—fire, air, water and earth

Since times immemorial clay, plaster, and lime have been used in making stone walls. The first cast walls were erected in Greece as early as the third century B. C., but it was the Romans who developed the concrete of antiquity.

Roman concrete was a mix of lime and volcanic pozzolana sand. It got its name from the village of Pozzuoli, which was situated on the slopes of Mount Vesuvius. The pozzolana had been spewed out from the glowing mass of fire inside the volcano.

"The fire and the heat of the flames, which emerge from inside the mountain through the cracks, make the soil light, and the tufa that is found there is porous and free from moisture. When lime, pozzolana, and tufa, all created in the same way by the fire, are mixed, they merge with the help of water, and the moisture causes them to harden rapidly into a substance which can neither be dissolved by waves or water."

This is how the Roman architect Vitruvius in the age of the Emperor Augustus described the unique property of pozzolana. In combination with lime and water it hardens, turning into Roman concrete, as strong and durable as the best concrete produced today. Concrete was used more and more in the construction work of the Roman Empire, in aqueducts, harbours works, bath-buildings, etc., and when Nero had Rome rebuilt after the Great Fire in 64 A. D., the innovative techniques of concrete construction made for a new architecture.

By casting huge domes and vaults in concrete in Nero's time builders lay the foundation for a new concept of space, with the shape of the site and the concrete material forming a mutual relationship. Fire had created the burnt soil; in combination with water the soil hardened into structures which took possession of space and hence air—pozzolana was indeed a stuff which was connected with the four elements.

However, Roman concrete never had a direct visual expression. The Romans either lined their concrete structures with rough stones or cast the concrete between cavity walls of brick or stone. But even if the concrete was hidden behind stucco, rough stones, and terracotta it was the prerequisite of vaults and domes and a free use of space (Fig. 1).

Today's concrete–form and function

As long as we stick to two dimensions there are hardly any limits for the creations we can make with the help of pen and paper, but many projects never got further than the drawing-table because there was no material which would share the boundlessness of the design on paper.

In the late 18th century French architects for instance designed ideal projects on a utopian scale. Étienne-Louis Boullée drew a monument for Isaac Newton, which seemed to be too large to be realized in any material or any construction (Fig 2). Large historic concrete structures like for instance Pantheon gave evidence of the technique and the materials which the Romans had once mastered, and they were an inspiration to many architects. But it was only in the 20th century that technological advances created opportunities for building projects on the size of Boullée's Newton monument.

However, the material which was a prerequisite was already available in Ledoux's time. The English engineer John Smeaton had been a pioneer in the analysis of the properties of pozzolana. He made use of these findings in con-

structing a lighthouse at Eddystone off the south coast of England. Here stone blocks were joined with water-resistant Roman cement consisting of pozzolana and lime.

But Smeaton's concrete was dependent on the presence of natural volcanic soil, and it was only by burning lime and mixtures of clay at a temperature of about 1500 degrees that the Englishman John Aspdin in 1824 was able to take out a patent for the production of synthetic concrete under the label Portland Cement. What used to be brought forth by volcanoes could now be produced everywhere in the huge kilns of the industrial age.

This was also the case with iron, the second prerequisite for the development of concrete technology. In the 19th century use was made of both materials in the erecting of buildings. The first skyscrapers and the Eiffel tower were made exclusively of steel, while concrete was used for a great deal of construction work from harbours to fortifications and facade ornamentation. When iron was first used to reinforce concrete, a whole new material was created. As iron has great resistibility to traction force and concrete has great resistibility to stress, together the two materials contracted a successful alliance, in which concrete also protected iron against rust, and where their united efforts doubled the strength.

The Frenchmen Lambot and Monier were among the pioneers who worked with the new material in the middle of the 19th century. They each constructed rowing-boats and flower-pots, among other things, by moulding concrete around steel mesh. It was, however, the engineer François Hennebique who was to develop the knowledge of the constructive powers of reinforced concrete. By determining the position and the dimensions of the reinforcements he also lay the foundations of a mathematically controlled concrete.

Behind Roman concrete there were the experiences of a long time span, while Smeaton's scientific analyses had paved the way for today's concrete. The first entirely artificial concrete was produced by Aspadin, and with reinforced concrete a building material with a new set of properties was developed. The use concrete is put to today varies from free and organic to mathematically computed forms in bold and slender bridge and hall constructions (Fig. 3).

Concrete is produced in standardized building processes in the shape of both simple and advanced structural components. But it is also cast in situ and used for special solutions needed for representative and monumental constructions with great sculptural qualities, such as the Sydney Opera House by the Danish architect Jørn Utzon or bridges and halls by the Spanish engineer and architect Santiago Calatrave.

The uses to which concrete can be put are as different as night and day—in heavy and fundamentally dark constructions on one hand, and on the other in the thin and taut concrete sails of airy constructions soaring towards the sky.

Surface and content

To draw attention to an ideal geometry the architects of the late 18th century constructed buildings which either had large stucco surfaces or were made of homogeneous stones within a narrow colour range. The role of the material was to emphasize the surface as much as possible.

To Modernism the continuous surfaces of geometry also represented the ideal way of seeing surface and content. In the catalogue for the exhibition entitled "The International Style" Henry Russel Hitchcock and Philip Johnson write: "The ubiquitous stucco, which still serves as the hallmark of the contemporary style, has the aesthetic advantage of forming a continuous even covering. But if the stucco is rough, the sharpness of the design, which facilitates apprehension of the building's volume, is blunted. Rough stucco, because of its texture and because it recalls the stucco-covered buildings of the past, is likely to suggest mass."

However, the even surface was not the only expression of the stucco and concrete of Modernism. At the beginning of the 20th century the French architect Auguste Perret made an important contribution to the development of the property and character of concrete. Perret gave new importance to concrete as a building material, as at the same time substance and surface. With a concrete construction consisting of supporting pillars and decks in the block of flats in the Rue Franklin in Paris, Perret created the preconditions of a free plan. Perrret varied the expression of the facade materials from rough concrete, carrying the imprint of the unplaned boards of the form, to cast blocks of concrete, which had been beautifully cut (Fig. 4). Perret used concrete in the same way as the finest natural stone; he had it treated with hammer and chisel until the surface was pleasant and expressive (Fig. 5).

As an apprentice with Perret Le Corbusier learned about concrete construction, and when he started his own enterprise he called himself Ch.-E. Jeanneret, architect BÉTON ARMÉ. While early modernism had stressed the even surface, contrasts between for instance concrete and natural stone became important parameters of expression from the mid thirties. In the fifties the sculptural articulation of concrete became more and more marked as did the expressiveness of the material. Rough untreated concrete cast in forms made of unplaned boards gave expression to an entire architectural movement called "the New Brutalism", an uncompromising and at best honest architecture. Le Corbusier labelled the rough concrete surface béton brüt, and in the fifties he used the technique of unplaned boards and rough stones mixed as aggregate with the cement, both in blocks of flats and in monumental buildings (Fig. 6).

The demands for energy-saving measures and the criticism levelled at the uncompromising late Modernism led among other things to the interest in architectural surfaces evinced by Postmodernism. But the connection between construction and content is often lost when thin cavity walls of brick, wood or metal merely become the modish exterior of a concrete construction. By referring to new values which allow gratuitous ornamentation and an undeveloped building technique, disconnected constructions and expressions are justified. Could it be that a material link was lost in the criticism of the "brutal" but honest articulation of late Modernism?

Still, there is a frank connection between surface, expression and content in the walls of the Japanese architect Tadao Ando (Fig. 7). His method is to cast concrete between large sheets which are kept together at a certain distance by metal pins and clam-grips. This is a common casting technique, but Ando's walls remain unfinished. The traces of the joints between the sheets tell the story of how the wall was constructed, at the same time stating the scale and the proportions of the unfinished wall.

Surface and patina

Concrete contains cement, a powdered binding agent which consists of among other things lime and silicate. The cement is mixed with the aggregate of stone, gravel, and sand. If the concrete is left rough after the form has been removed, the appearance of the concrete is largely determined by the cement. This is due to the fact that cement is so fine that it covers the aggregate. Normally cement is grey, but white cement can also be produced. Concrete can be coloured by mixing coloured aggregate and pigment with the cement. Thus for instance the concrete of Bofill's Crescent, designed by the architect Bofill at Södra Station in Stockholm, has a yellow ochre colour, reminiscent of first-rate sandstone as in Stockholm's Castle.

If white cement is mixed with an aggregate of crushed marble the result is beautiful, white concrete, and this is what the Danish architect Jørn Utzon used in Bagsværd Church outside of Copenhagen. Moreover, here the concrete was cast in metal forms and compacted by a vibrator, giving the finished product a very white, shiny and smooth surface.

A mix of marble and cement was also used by the Italian architect Paolo Portoghesi for the new mosque in Rome. Here white concrete undulates in long, fantastic ribbons, which filter the light and which are nearly as interlaced as a plateful of tagliatelle (Fig. 8).

Another way of treating the concrete surface is by

flushing away the cement when the form has been removed and before the concrete has hardened. In this way the aggregate becomes visible as a rough surface of coloured stone. In the London Zoo the walls of the elephants' cage were cast with a shuttered relief which was broken in order to create a rough surface against which the elephants can rub their tough hides.

No material lasts for ever, and even concrete ages. Every material is affected by wind and weather and wear by humans. Sometimes the effect is a beautiful patina which enhances the expression. Rain water, pollution and wear leave traces such as dark shadows under protruding parts of the facade. This can be predicted to some extent. Metal salts from green copper plate or rusty iron can make colourful contrasts on monochrome concrete surfaces.

However, sometimes the decay can go so far that what is left is a useless ruin. Concrete surfaces which have been eroded by frost or salt and where the reinforcing metal rods have been exposed, threatening the building with destruction, must of course be taken care of immediately.

In whatever connection or condition a material is found, it has properties which can give rise to new interpretations and attitudes. Concrete is predominant in our culture, just as it was in Roman times. Hence it is particularly important that we appreciate this material and that we learn to understand and interpret both the technology and the means of expression that go with it.

Concrete – three-dimensional reproduction

The form in which the concrete is cast must be fashioned with some understanding of the transformation which the material goes through in the process from idea to hardened concrete construction. The form can be compared to a machine waiting to be filled by the gravitational energy of the material and to be started.

The history of modern concrete is approximately contemporaneous with that of the photograph. At the same time as Smeaton designed the lighthouse at Eddystone, it was known that silver salt, which is the prerequisite of traditional photography, darkens under the influence of light. Both materials also have the characteristic of being well suited for reproduction. Concrete is cast against a form which is the negative picture of an idea, while the photograph is printed from the exposed and developed negative film.

Like metal, glass, and plastic, cast concrete is suitable for both reproduction and original works. With its simple and variable mineral substance, concrete is a material which can be used on a large scale, both technically and aesthetically.

Romanticism and tragedy

At the end of the sixties an earthquake in Sicily erased the small village of Gibellina. Many people died and it was decided that the village should be rebuilt in a safer place. Since many emotions were still connected to the ruined village, a project led by the artist Alberto Burri was decided upon (Fig. 9). The project consisted in covering the blocks of the old village with a layer of concrete, so that streets and houses were resurrected as a bas-relief. The imprint of the old village now forms the scenery of yearly theatrical performances. In a way the drama enacted within the low concrete relief has given a new and less risky life to the old village.

The use concrete was put to after the catastrophe caused by the breakdown of reactor 4 at Chernobyl in 1986 was absolutely necessary, but less romantic. Here concrete was poured over the meltdown with the help of helicopters. The concrete formed a shield, protecting against radioactive radiation.

Under water concrete hardens without air. After the Estonia catastrophe plans have been made to pour concrete over the sunken ship, both to protect it against marauders and to create a dignified grave site. Concrete was also chosen to protect the German army. Along the Atlantic coast there was a heavy chain of concrete bunkers and fortifications forming the so-called "Festung Europa". In a book about this concrete defence system the French architect and philosopher Paul Virilio has described the importance of the material: "In brick or stone constructions, in assemblages of discontinuous elements, the balance of the buildings is a function of the summit-to-base relationship. In the construction of single-form concrete, it is the coherence of the material itself that must assume this role: the centre of gravity replaces the foundation.

In concrete casting, there are no more intervals, joints—everything is compact; the uninterrupted pouring avoids to the utmost the repairs that would weaken the general cohesion of the work."

A fortress and a bunker of a different kind than those defending the Atlantic coast was the rebuilt private residence of the retired Scanian dragoon, Karl Göran Persson. In the shadow of the Cold War he fortified his home at Söderto with concrete, which he bought for his savings, and which he reinforced with scrap iron. The house has been called a fortress, a bunker, a bulwark and a functional house. Karl Göran Persson died in 1975, and the house still rests as a monument and a concrete colossus in its own centre of gravity on its clay feet of Scanian soil.

The scenic qualities of concrete were brought out as it was used to create the miles and miles long ribbons of the new motor ways. The time was marked rhythmically, faster and faster, while the car accelerated across the joints in the cast concrete. As an ornament for a new age the concrete made the landscape accessible for both Volkswagen cars and Tiger tanks.

In spite of its name even the iron curtain was made of concrete. At last the concrete wall between East and West was torn down, and little chunks of concrete, communist grey on one side and covered with colourful graffiti on the other, acquired a value as relics in the all-enveloping market economy.

Epilogue

The English word 'concrete' comes from the Latin verb concrescere which means 'to grow together', 'to coalesce'. This goes very well with the binding properties of concrete, but the word also gives rise to associations to the adjective 'concrete', meaning 'material', 'perceptible'. 'Concrete' is obviously the opposite of 'abstract' , 'theoretical'; however, concrete is to a large extent a material which has both concrete and abstract properties and means of expression (Fig. 12).

Wet steam from lime and cement which have been mixed with water gives off a warm smell of concrete. The wet concrete is poured into firm forms, and we can still make a footprint or a hand print and be enclosed in the sluggish slurry. But time works both for us and against us and soon the wet mass has hardened. Further operations can only be performed with the help of tools and physical force. The idea resided already in the empty form. Soon it is transformed into the hardened substance and cool volume of concrete.

Ola Wedebrunn, Works Cited, special issue on concrete

Captions

Fig. 1. Section of the dome of Pantheon, Rome, ca. 120 A. D.

Fig. 2. Monument for Newton, Étienne-Louis Boullé, 1784.

Fig. 3. Bridge by Langweiss, Switzerland. Engineer: H. Schürch, 1912–14.

Fig. 4. Cast staircase and transparent wall made of concrete sheets, from the former Musée des Travaux Publics, A. Perret, Paris, 1937.

Fig. 5. Cast and cut blocks of concrete, from the former Musée des Travaux Publics, A. Perret, Paris, 1937.

Fig. 6. Water reservoir cast in the béton brüt technique at the chapel of Notre Dame du Haut, Le Corbusier, Ronchamp, 1950.

Fig. 7. Concrete wall by Tadao Ando, ca. 1980.

Fig. 8. Concrete constructions as dissolving ribbons in a mosque in Rome by P. Portoghesi, 1989.

Fig. 9. Gibellina, sealed in concrete, A. Burri, 1970.

Fig. 10. Section of the ruined Berlin wall, after 1989.

Fig. 11. Concrete carriage-ways in a German landscape, G. Fritz, Berlin, 1938.

Fig. 12. "WOW CONCRETE", comic strip by Paul Chadwick, from the magazine Concrete Quarterly, No. 171, 1991.