Potres pretres / *A Quake and a Shake Up*

Miha Dešman

Edino človek pozna katastrofe, če jih preživi. Narava ne pozna katastrof.
Max Frisch*, Človek se pojavi v holocenu (Der Mensch erscheint im Holozän,* Suhrkamp, 1979)

Spoprijemamo se z velikimi problemi – poplavami, potresi in številnimi neumnostmi,
ki jih danes počnemo ljudje – mislim na katastrofe, ki smo si jih sami ustvarili.
Po drugi strani lahko vsakemu človeku na ulici damo možnost, da si pomaga sam.
In boriti se za to je bila ena od mojih dolžnosti.
Frei Otto, cit. po: D.A. Ottmann, *Ecological Building Materials for Deserts and Drylands*, (Springer Nature, 2022)

Med letošnjim požarom na Krasu se je znova pokazalo, da naravne nesreče vzbudijo neverjetno solidarnost pri ljudeh. Ta izhaja iz zavedanja, da se je nesreča res zgodila in da je treba pomagati. Vprašanja o vzroku požara in o možnosti njegove preprečitve, omejevanju njegove moči in usklajenem ravnanju so ostala v ozadju. Moram priznati, da me je groza, ko slišim, da je le srečno naključje rešilo skupino pogumnih gasilcev, da jih ogenj ni obkrožil. Pri vseh naravnih nesrečah, in še zlasti pri potresu, je podobno. Ljudje se povežemo v skupni skrbi. Res je, vedno se najdejo tudi dobičkarji, ki skušajo izkoristili razmere. Vsekakor pa so pogosto prav katastrofe gibalo pozitivnih družbenih, tehničnih in civilizacijskih premikov.
A vprašajmo se, kaj sploh je »naravna« nesreča oziroma naravna katastrofa, kot se rado zapiše novinarjem? Ali je narava povzročiteljica nesreč? Potresi, požari, vremenski pojavi, kot so poplave, tajfuni, suše, da ne omenjam globalnega segrevanja, kažejo, da se je »Narava« spridila, obrnila proti človeku, saj se ne moremo več zanesti na njeno predvidljivost. Potresi so v tem seznamu katastrof še najbolj tradicionalno nepredvidljivi, druge naravne nesreče pa postajajo nepredvidljive v procesu sprememb tradicionalnih ritmov letnih časov, vremenskih ciklov in iz njih izhajajočih kulturnih vzorcev. Zdi se, kot bi se bližal konec znanega sveta, kakršnega so tisočere generacije dojemale kot najbolj očiten temelj svojih življenj.
Po prepričanju mnogih je človek tisti, ki je v dobi antropocena nepopravljivo pokvaril naravo, ta pa se mu zdaj maščuje za njegov *hybris*. Nepredvidljivost narave je nedvomno izraz naše nepripravljenosti, da bi se resno ukvarjali z njenimi »skrajnimi stanji«, pa naj gre za pojave, na katere nimamo vpliva, kot naj bi bili potresi, ali pa za obvladovanje učinkov naših lastnih posegov v njeno delovanje, ko govorimo npr. o globalnem segrevanju. V obeh primerih gre za odgovornost zaradi morebitnih posledic, za predvidevanja, iz katerih smo (ali pač nismo) sposobni in dolžni potegniti določene konsekvence.
Verjetnost katastrofalnih dogodkov je danes mogoče statistično napovedati s pomočjo vse natančnejših in kompleksnejših računalniških modelov. A kdaj in kako se bodo ti dogodki, npr. potres, dejansko zgodili, ne ve nihče. Prizadetim ostane občutek nemoči, saj se pobesneli sili narave šibke človeške moči ne zmorejo upreti. V preteklosti so zato odgovornost naprtili bogovom in ljudje naj bi bili krivi le posredno, z grehi, s katerimi so vzbudili božji srd. Z napredkom znanosti in družbe pa so ta verovanja izgubila pomen.
Še enkrat: narava v naših rokah postaja vse bolj krhka in ranljiva. Ne zavedamo se dovolj njene končnosti, tega, da je vesoljska ladja zemlja,[1] kot pravi Buckminster Fuller, del naše kolektivne identitete, utemeljene na funkciji metafizične nadvlade nad fizičnim svetom. Ljudje smo se znašli v vlogi astronavtov, ki to ladjo upravljamo, od nas je odvisna njena in naša usoda. Človeška rasa je odrasla, ne ve pa se še, ali bo prevladalo načelo dobrega ali zla. Odgovornost je obrnjena: niso narava ali bogovi tisti, ki bi skrbeli za nas, skrb je nepreklicno padla na nas.
Slovenija, še posebej pa Ljubljana, leži na področju z visoko verjetnostjo močnih potresov. Zavedanje o tem je vpeto v arhitekturno in urbanistično zgodovino. Pretekli potresi so vplivali na razvoj številnih mest, tudi Ljubljane. Potres leta 1895 kot katastrofalen dogodek je bil eden ključnih povodov, da se je Ljubljana iz provincialnega mesta razvila v sodobno nacionalno prestolnico.
Med vsemi katastrofami imamo za potrese najbolj razdelane ukrepe in tudi novogradnje morajo slediti natančnim predpisom. Drugače je z obstoječim stavbnim fondom. Kljub znani in opredeljeni nevarnosti potresa je protipotresna prenova manj učinkovita. Čeprav obstajajo organizacije in posamezniki, ki se trudijo za izboljšanje potresne varnosti stavb, prizadevanja za zdaj ostajajo na idejni ravni zaradi številnih, tudi birokratskih ovir. Torej je v tem neka kalkulacija tveganja, podobno kot pri igrah na srečo. Če bomo imeli srečo, da potresa ne bo, se bomo izognili visokim stroškom potresne sanacije ali celo potresno varne gradnje.

1 http://designsciencelab.com/resources/OperatingManual_BF.pdf

Only humans know catastrophes inasmuch they survive them.
Nature knows no catastrophes.
Max Frisch, Man in the Holocene, *Suhrkamp Verlag, 1979*

We have big, big problems - flooding, earthquake, and many foolish things which now people are doing - I mean, these self-made catastrophes. We are able to give to every man on the street the possibilities to help himself. And to fight for this was one of my duties.
Frei Otto, as cited in D.A. Ottmann, Ecological Building Materials for Deserts and Drylands*, Springer Nature, 2022*

During this year's fire in Slovene Karst, it was proven once again that natural disasters inspire incredible solidarity in people. This solidarity is based on the understanding that a disaster really did occur and that help is needed. Questions regarding the causes of the fire and the possibilities of preventing it, limiting its scope, and of a co-ordinated response remained in the background. I must admit that I shudder when I hear that a group of courageous fire fighters were saved from being trapped by fire by sheer luck. Any natural disaster, and an earthquake in particular, produces a similar occurrence: a common menace brings people together. Granted, there are always attempts by profiteers to take advantage of the situation. Yet catastrophes often prove to be the key driving force of the advances in society, technology, and civilisation.

But let us examine what a "natural" disaster or a natural catastrophe - a term often favoured by journalists - actually is. Is nature ultimately the cause of disasters? Earthquakes, fires, weather phenomena such as floods, typhoons, and droughts, not to mention global warming, suggest a corruption of "Nature" and its turning on the humanity, being that we can no longer rely on its predictability. In this list of catastrophes, earthquakes are most traditionally unpredictable while the rest of natural disasters are becoming unpredictable in the process of the changes of traditional seasonal rhythms, weather cycles, and cultural patterns which are based on them. The world as we know it, one that thousands of generations understood as the supremely evident foundation of their lives, seems to be nearing its end.

Many believe humans to be those who have irreparably broken nature in the age of Anthropocene, and that now nature is getting back at us for our hubris. The unpredictability of nature is certainly the expression of our lack of willingness to seriously tackle its "extreme states", both the phenomena which we're unable to influence, such as earthquakes, or the management of the end products of our own interventions into nature's functioning, e.g. global warming. Either case is ultimately about the responsibility towards the potential consequences, towards anticipations which ought to (but may not) compel us to be able and obligated to draw certain conclusions.

Nowadays, the probability of catastrophic events may be statistically predicted using increasingly precise and complex computer models. But when and how these events, e.g. an earthquake, will actually occur is impossible to know. Those affected are left with a feeling of powerlessness as frail human capability falls short of being able to stand up to the savage force of nature. In the past, the responsibility had been passed onto gods while people would be to blame only indirectly, due to their sins, which provoked gods' wrath. Scientific and social advances have since caused such beliefs to lose their meaning.

It bears repeating that nature is becoming increasingly fragile and vulnerable at our hands. We're insufficiently aware of its finiteness, of the fact that Spaceship Earth[1], according to Buckminster Fuller, is part of our collective identity founded upon the function of metaphysical mastering of the physical. People have assumed the role of astronauts sat at the ship's controls, and both its destiny and our own is in our hands. The human race has grown up but it's as yet undecided which principle will prevail, good or evil. The responsibility has been turned on its head: we're not under the guardianship of gods or nature but unequivocally in charge of ourselves.

Slovenia, and Ljubljana in particular, covers an area with a high likelihood of severe earthquakes. The reality of earthquake is embedded in the architectural and urbanistic history. In many cities, with Ljubljana among them, past earthquakes influenced the city's development. It was precisely in Ljubljana that the 1895 earthquake, as a catastrophe-event, served as one of the catalysts for the city to evolve from a provincial town into a modern national capital.

1 http://designsciencelab.com/resources/OperatingManual_BF.pdf

Statistika je neizprosna. Treba bo živeti s katastrofami. Potres (v Ljubljani) se bo slej ali prej zgodil. Ukvarjanje s potresno preventivo ima poleg kulturnega, strokovnega in znanstvenega pomena tudi družbeni vidik: prepričan sem, da lahko ljudje le, če prepoznamo in razumemo problematiko v celoti, razvijemo sposobnost smotrnega ukrepanja in konec koncev odgovornost do svojega okolja in kraja bivanja. Seveda bi bilo utopično pričakovati, da bo to zavedanje zajelo vse vidike človekove eksistence v tem svetu.
V svetu prevladujoči kapitalistični družbeni sistem se na grožnje načeloma odziva tržno racionalno. Kaj to pomeni v boju proti grožnji potresa? Kapitalizem vsako situacijo, tudi grožnjo katastrofe, brez težav spremeni v področje kapitalskih vlaganj in konkurence. A vendar pri potresu narava obravnavanega tveganja v temelju izključuje tržno rešitev. Treba je upoštevati, da so naravni in družbeni dejavniki kompleksno medsebojno povezani in da nas čakajo globoke spremembe v ekonomiji in potrošništvu; radikalno bomo morali redefinirati družbeno ureditev in iznajti nove ravni globalnega sodelovanja.

Kako torej razumeti potres kulturno in teoretsko?
Naloga nas sili tudi k novemu razmišljanju o razmerju med kulturo in naravo. Prav element omejene obvladljivosti gradnje in bivanja glede na naravne pojave kliče po novih zamislihin rešitvah, ki povezujejo zmožnosti računalniškega načrtovanja in produkcije s kulturnimi vidiki ter z učenjem od narave. Voditi mora do sinteze, v kateri bosta pozornost do vseh različnih dejavnikov in prisvajanje med seboj povezana. Arhitekturne teme naj izhajajo iz takšne skladnosti (onstran) narave in kulture.
Načrtovanje gradnje in prenove stavb, objektov, urbanih prostorov in krajin zahteva celostni pristop, ki združuje vizualno in prostorsko razmišljanje, obvladovanje tehnik gradnje, sposobnost interpretacije družbenih potreb in teženj, občutek za arhitekturno zgodovino, intuitiven občutek za obliko, obvladovanje orodij za reševanje problemov, razumevanje materialov in obrti, razumevanje podnebja in naravnih sil, skratka trdno arhitekturno in inženirsko kulturo, ustvarjalnostin umetniško moč.
Na koncu naj se še enkrat dotaknem vprašanja o vzrokih in o možnosti preprečevanja posledic, omejevanja škode in usklajenega ravnanja pri potresih. Najpreprosteje rečeno, preventiva je boljša kot kurativa, za uspešnost obeh pa je odločilen celostni pristop, ki poveže politično voljo, ljudi in stroke. Pri vpletenih strokah ne gre zgolj za gradbeništvo in arhitekturo, temveč za interdisciplinarno povezavo okoljskih, humanističnih in tehničnih ved.
Že pred več kot pol stoletja je Lucius Burckhardt zapisal misel o krizi urbanizma, ki, če besedno zvezo urbano načrtovanje zamenjamo s potresno varnostjo, velja tudi za našo temo:[2] *»Vera, da se da potresno varnost doseči s gradbenimi predpisi in z inženirskimi ukrepi, je ena temeljnih zablod. Zagotavljanje statične trdnosti je nujen, a samo omejen del rešitve, večinski del je sestavljen iz organizacijskih in institucionalnih dejavnikov. Te je mogoče spreminjati šele s politično voljo. Zato okolje sestavljajo predvsem pravila družbenega dogovora.«*

2 Lucius Burckhardt, Stadtplanung und Demokratie (Urban Planning and Democracy, *Bauwelt 37*, 1957).

Among all catastrophes, the earthquake is the one with the most developed measures and new buildings must follow precise regulation. This is unlike the existing built stock. Despite the present and defined danger of earthquake, seismic renovation is less effective. Though there are organisations and individuals that endeavour to improve seismic safety, the ideas haven't progressed beyond their initial phase due to numerous obstacles, including red tape. A calculated risk of sorts seems to be involved, as if we were playing a game of chance. If we luck out and there isn't an earthquake, we'll avoid the considerable cost of earthquake reconstruction or even earthquake-resistant construction.

There's no bargaining with statics. We'll have to co-exist with catastrophes. There will be an earthquake (in Ljubljana). Beside a cultural, professional, and scientific significance, there is also a social aspect to seismic prevention: I'm convinced that recognising and understanding the problem in its entirety is the precondition for us to develop the capacity for acting sensibly as well as the responsibility towards our environment and place of habitation. Naturally, expecting such awareness to encompass all aspects of human existence in this world would be beyond unrealistic.

The globally predominant capitalist social system tends to respond to threats in a market-conscious rational manner. What does this mean in regard to the threat of earthquake? Capitalism makes light work of transforming any situation, including the threat of catastrophe, into a circumstance of capital investment and competition. Yet when it comes to earthquakes, the very nature of the risk in question fundamentally excludes a market solution. Keeping in mind that natural and social factors are interrelated in a complex manner and that we're overdue for profound changes in economy and consumerism, it is upon us to radically redefine our social system and invent new layers of global co-operation.

How, then, are we to understand earthquakes culturally and theoretically? The task compels us to rethink the relationship between culture and nature. It is precisely the fact that in the face of natural phenomena, construction and habitation are only manageable to an extent that calls for new ideas and solutions which connect the capability of computer-aided design and production with cultural aspects and with learning from nature. It must lead to a synthesis where the attention to all the various factors interconnects with appropriation. Architectural topics should use such harmony of, and beyond, nature and culture as a vantage point.

Planning the construction and refurbishment of buildings, structures, urban spaces, and landscapes requires a comprehensive approach which combines visual and spatial thinking, mastering construction techniques, the ability to interpret social needs and tendencies, a sensibility towards architectural history, an intuitive sense of form, mastering problem-solving tools, understanding materials and crafts, understanding the climate and natural forces - in a word, solid architectural and engineering culture, creativity, and artistic power.

As I wrap up, allow me to again address the question of the causes and the possibilities of preventing the consequences, limiting the damage, and of co-ordinated action in the event of an earthquake. Simply put, prevention is better than cure, yet but for both of them to be successful, a comprehensive approach bringing together political will, people, and disciplines is crucial. The disciplines involved are not to be limited to civil engineering and architecture but ought to combine environmental and technical sciences as well as humanities in an interdisciplinary manner.

More than half a century ago, L. Burckhardt wrote on the crisis of urbanism. If we replace the term "urban planning" with "seismic safety", the notion holds true also for the topic at hand[2]*:* "The belief that seismic safety can be achieved through building regulation and engineering measures is a fundamental error. Ensuring static strength is a prerequisite part of the solution, but a noncomprehensive one, while the majority stake consists of organisational and institutional factors. These can be changed only through political will. Consequently, the environment is made up chiefly of the rules governing the social agreement."

2 *Lucius Burckhardt, "Stadtplanung und Demokratie" ("Urban Planning and Democracy"),* Bauwelt 37*, 1957*