Are there more building failures than there used to be? Or, to ask the question in a slightly different way, have buildings become more dangerous? Conventionally, accidents have been seen as a hazard of modernity – modernity multiplied the possibilities for accidents. In the words of Paul Virilio, ‘to invent the sailing ship or steamer is to invent the shipwreck. To invent the train is to invent the rail accident of derailment. To invent the family automobile is to produce the pile up on the motorway’. Every new invention creates its corresponding accident, and the more inventions there are, the more accidents there will be – with the result that ‘in the course of the twentieth century, the accident became a heavy industry’. Buildings are not immune to this process. Each innovation—high alumina cement, box girder bridges, external insulation cladding systems—gives rise to its accidents, and since there have been more inventions in building in the last century and a half than in the previous three millennia, there seem to have been more failures.

A casual glance at the statistics from the insurance industry would appear to confirm the escalating number of accidents: ‘at $144 billion, the insured losses from natural and man-made disasters worldwide in 2017 were the highest ever recorded in a single year’ reported the Swiss Re research group Sigma. But these figures do not necessarily mean that there were more accidents. They could simply mean that people have become more risk averse, and so have been taking out more insurance, while insurers have become more skillful in covering a wider range of previously uninsurable risks. The more people live in the present, and the less in the past or in the future, the more attention they pay to accidents. According to the figures from the insurance industry, earthquakes, wildfires, hurricanes, tsunamis and floods are occurring increasingly often, while disasters resulting from human causes— which can be broadly classified as ignorance, carelessness or greed—appear to be receding. Yet this distinction between natural and human or technical disasters is deceptive, for it is no more than a fiction created by the insurance industry. For a long time, insurers only covered risks arising from human causes, while hazards from natural causes were considered uninsurable because the likely magnitude of the claims would be beyond the resources of any one insurance company. The distinction was a means for insurers to protect themselves from unbearably large claims.

Although there are some risks that are wholly attributable to human or technical causes—building fires, structural failures, nuclear melt-downs—the risks arising from natural disasters are also largely preventable, if at a cost. It is perfectly possible to build hurricane-proof structures, to reinforce every building in an earthquake zone such as to make it resistant to the worst shocks, to build flood defences, and so on. It is simply that we choose not to, because the cost of doing so is so much greater than repairing or replacing damaged buildings when disaster strikes. The consequences of most natural disasters are, in theory, preventable, so one can say that all disasters affecting buildings are in effect human or
technical failures. The Fukushima nuclear disaster in 2011 was in the first instance caused by an earthquake and tsunami, though the subsequent inquiry declared the causes to be human, since the disaster was foreseeable, and the plant could have been designed to resist the natural forces to which it was subjected. Similarly, the increase in claims arising from flooding is not simply because of rising sea levels, but because so much new building throughout the world in the last half century has occurred in low-lying coastal areas. It is not the floods that are the problem, it is the compound of human ignorance, carelessness and greed that has exposed so many buildings to risk of flooding. The scandal of almost all building failures is that the foreseeable was ignored. Post-accident investigations tend to concentrate on the technical causes of the failure, but these are rarely the heart of the problem. What they should be asking are the mechanisms that caused people to set aside the knowledge they already had – and those mechanisms range from political expediency to a psychological predisposition not to believe in risks. The science of building failures might do better if it transferred its attention from technical problems to the social and the human realms, to the capacity of groups and of individuals to delude themselves into thinking that an accident will only ever occur somewhere else, but not here.

Has the nature of human-made disasters changed? Buildings have always been prone to collapse – think of the choir vault of Beauvais cathedral in 1284 – and it is from these failures that people have learnt. The collapse of the Polcevera Viaduct in Genoa last summer was not, in that respect, a new type of disaster. But modernity, it is said, created new conditions for the accident, first of all though speed, and secondly scale. ‘With speed, man has invented new kinds of accidents’ wrote Gaston Rageot in the 1930s, with motor accidents in mind. While speed, in terms of velocity, has not been a direct factor in building failures, except when they suffer impact from fast-moving objects like cars or aeroplanes, scale certainly has been. Buildings have been getting bigger and bigger, and whether it is a matter of height – like Grenfell Tower - or area – like the 1.4 hectares of Summerland amusement arcade in the Isle of Man, which caught fire in 1973 – a large building has greater potential for catastrophe than a small one. Against an overall reduction in the total number of building accidents, has to be set the magnitude of those that do occur. Scale has magnified the risks. But the scale of Grenfell and of Summerland – the two building catastrophes with the largest loss of life in the UK in the last fifty years – was not just a matter of building volume. It was also a matter of the multiplication of contractual relationships, between owners, consultants, contractors and managers, a network so complex and extended that overall responsibility for exposing the buildings’ potential for disaster (or, in other terms, their ‘safety’) was able to slip through everyone’s fingers.

Even if failures are less frequent, we should not suppose that the potential for disasters has receded. Failures in building are not abnormalities or exceptions. On the contrary, the propensity to failure is always there in buildings. Far from being stable objects, ‘safe as houses’, buildings are inherently unstable things, subject to endemic uncertainty. As containers of so many different things, people, energy, water, gases, they are permanently in
flux as all these flow through them in varying and unpredictable quantities, making them susceptible to internal discrepancies and disequilibrium, to which they only with difficulty react quickly enough to ward off decay or ultimate catastrophe. This is not the exception to the rule – it is the rule. I remember a few years ago attending a conference of concrete repair specialists, who saw every concrete building as an accident waiting to happen. We tend to see accidents as sudden events – but the reality is that building failures are gradual, they are there all the time, though they may only be revealed at an instant. As the French poet Paul Valéry wrote, 'An accident is the appearance in something of a quality that was masked by another of its qualities … This vase serves my purpose, but in addition, it is a glass object exposed to a world of shocks'. Like the vase, every building has its accidents already in it – it is simply that we may not choose to see them. The question for the future is how to make sure that a building’s propensity for accident is not masked. Historically, this was a function of the state, but with its present-day general contraction, the state can no longer be relied upon to perform this role. Architects and engineers have professional responsibilities not to create dangerous structures, but lack the authority to enforce safety. Without some solution to this impasse, it seems likely that building accidents will become not less, but more common.

2 Ibid., p.12
3 Ibid., p.25