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EDITORIAL

[L]e vieux pont tombe en déshérence et le fleuve sous les piliers y est sombre, nauséabond. La rouille fait lèpre toxique sur ses poutrelles et ses plaques, le bois du tablier craque, on le sent qui bouge [...] Un homme se présente qui a la solution. Il se nomme Ralph Waldo, débarque de São Paulo, c'est un architecte à la fois célèbre et secret. Il entre dans la salle requise pour les auditions du concours, les mains libres et calmes le long du corps, il décrit la forme qui ramasse les lieux : pour dire l'aventure de la migration, l'océan, l'estuaire, le fleuve et la forêt, la passerelle de lianes au-dessus des gorges et le tablier qui joue au-dessus du vide, il a choisi un hamac hautement technologique ; pour dire la souplesse et la force, la flexibilité et la résistance aux forces sismiques. Il a choisi un matelotage de câbles et des ancrages de béton massifs ; pour dire la cité ambitieuse, il a choisi deux tours de métal enfoncées dans le lit du fleuve, gratte-ciel émetteurs de puissance et capteurs d'énergie ; pour dire le mythe, il a choisi le rouge. Soit un pont suspendu d'acier et de béton. [...] Mesures, tableaux, graphiques, ces conclusions détaillaient avec précision les informations livrées par les sondes récemment posées sur le sol de Coca, têtes chercheuses munies de petites charges explosives dont on analysait les déflagrations – bruit, propagation et vibrations des ondes de choc – afin de connaître la réalité de la matière, sa morphologie interne, la teneur de sa constitution, sa potentialité [...] C'était la description sensible d'un tâtonnement gigantesque et c'était là tout ce qu'il aimait, ça ressemblait vraiment à la vie¹.
Maylis DE KERANGAL, *Naissance d'un pont*, Paris, Gallimard, 2010, p. 61-67.

1 [English translation : “[The] old bridge is in escheat and the river under the pillars is murky and putrid. The rust eats away at its beams and slabs like some form of toxic leprosy, the wood on the deck is splitting, you can feel it moving [...]. A man shows up with a solution. His is called Ralph Waldo; he is an architect from San Paolo who is at once famous and mysterious. He enters the room to interview for the competition, his hands loose and calm down by his body, and describes the form places take : to describe the adventure of migration, the ocean, estuary, river and forest, the corridor of creepers above the gorges and the deck hovering over the void, he has chosen a highly technological hammock ; to convey suppleness and strength, flexibility and resistance to seismic forces, he has chosen a vessel of cables and solid cement anchors ; to describe an ambitious city, he has chosen two metal towers embedded in the river bed, skyscrapers emitting power and gathering energy. To describe the myth, he has chosen the colour red. A suspension bridge made of both steel and concrete. [...] Measurements, pictures, graphs ; these conclusions offer a detailed account of the information provided by the

2018 is proving to be an exceptional year for construction history events!

In terms of conferences first of all, the fifth annual conference of the British Construction History Society took place in Cambridge (Queens' College, 6–8 April), and was partly dedicated, for the first time, to a specific topic (the technical equipment of the building or ambiance: heating, ventilation, water supply, air conditioning, drainage, lighting, acoustics, etc.)² This was followed by the sixth international construction history conference in Brussels (9–13 July), which was also marked by numerous innovations: the introduction of original thematic sessions (upkeep, appraisals, architectural administration, precast concrete, the first thin sheets, colonial comfort, the transmission of contemporary knowledge in Asia)³; a publication strictly controlled through peer review (of 343 abstracts submitted, 245 were accepted, but only 167 articles were published, mainly from Western countries situated in the Northern Hemisphere)⁴; and a prize for the best article⁵ presented at the conference, awarded to two young doctoral students: Madhi

probes recently installed on the ground of the Coca, seekers fitted with small explosive charges, whose deflagrations are analysed – the sound, propagation and vibrations of the shock waves – so as to ascertain the real nature of the substance, its internal morphology, its makeup, and its potentiality [...] It was the perceptible description of a gigantic case of trial and error, and it encapsulated everything he loved; it truly resembled life.”]

- 2 James W.P. Campbell, Nina Baker, Amy Boyington, Michael Driver, Michael Heaton, Yiting Pan, Henrik Schoenefeldt, Michael Tutton and David Yeomans (eds.), *Studies in the History of Services and Construction. The Proceedings of the Fifth Conference of the Construction History Society*, Cambridge, Queens' College, Construction History Society, 2018, 534 p. ill. The other sessions primarily concerned frameworks, vaults, stakeholders, engineering, and masonry.
- 3 Besides the thematic sessions (two to three simultaneously), the thirty or so other open sessions (three to five simultaneously) dealt with classic subjects concerning processes, the individuals involved, and materials. Without diminishing the quality of each individual session, we would like to highlight, entirely subjectively, the ones that dealt with relatively new or rare subjects (alternative sources of construction history: vernacular architecture and earth construction; building policies and strategies; regulations and contract specifications; professions and contracts...).
- 4 Ine Wouters, Stephanie Van de Voorde and Inge Bertels, with Bernard Espion, Krista De Jonge and Denis Zatavani (eds.), *Building Knowledge. Constructing Histories*, Leiden, CPR Press/Balkema, Taylor & Francis Group, 2018, 2 vol., 1394 p. ill. (with a USB key).
- 5 This prize was awarded by the following jury (Antonio Becchi, James Campbell, João Mascarenhas and Robert Carvais) based on a selection of ten papers judged positively by the Scientific Committee of the conference, which were published in the proceedings and whose authors were present in Brussels. For the selection, the criteria of quality

Motamedmanesh⁶ for his paper entitled ‘The Secret of Zoomorphic Imposts: a New Reading of the Achaemenids Roofing System’, and Louis Vandenabeele⁷ for ‘Joining Techniques in Nineteenth – and Early Twentieth – Century Belgian Timber Roofs’.

As for exhibitions, construction history has instigated two exhibitions in Paris concerning the building site. It should be noted, firstly, that it was not until 2008–2010 that the interest in building sites as a global concept — whether mentioned in passing or in detail, and necessarily in the context of all the studies on the construction of a specific building — emerged as a fully formed subject. This is attested to, for instance, by the section dedicated to this topic in *Édifce & Artifice*.⁸ The first exhibition entitled “Dessiner pour bâtir. Le métier d’architecte au XVII^e siècle” (‘Drawing for Building. The Craft of the Architect in the Seventeenth Century’), put on by Alexandre Cojannot and Alexandre Gady at the Hôtel de Soubise in the National Archives from 13 December 2017 to 12 March 2018, dealt with the topic of the building site through the figure of the architect, who emerges as one of the key figures “deployed” on construction sites, along with members of the building industry and labourers. There, they develop methods specific to them and that they share with others working on the site: models and mock-ups, estimates, contracts and, in particular, construction drawings. This aspect formed the final third part of the exhibition, after a presentation of what it meant to be an architect at the time, and what was expected of them in their institutional environment. The heart of the exhibition centred on the drawing that constitutes the expression of the project. In this

and making an innovative contribution to the field of construction history alone were prioritised for the selection.

- 6 Madhi Motamedmanesh undertook his studies in Tehran (Iran) and is currently working on a doctorate at the Technical University of Berlin on the influence of architectural form on the development of structural systems.
- 7 Louis Vandenabeele, engineer and architect, is currently finishing a thesis at the Vrije Universiteit Brussel on the study and appraisal of timber frame constructions in Belgium in the 19th century and early 20th century.
- 8 Robert Carvais, André Guillerme, Valérie Nègre and Joël Sakarovitch (eds.), *Édifce & Artifice. Histoires constructives*, Paris, Picard, 2010, p. 865-1026. See also: Basile Baudez (dir.), *Grands chantiers et matériaux*, issue of the journal *Livraisons d’histoire de l’architecture*, no. 16, 2nd semester, 2008, and Philippe Bernardi, *Bâtir au Moyen Âge*, Paris, CNRS Editions, 2011, p. 49-64. See, however: Jean Guillaume (dir.), *Les Chantiers de la Renaissance*, Proceedings from the conferences held in Tours in 1983–1984, Paris, Picard, 1991.

respect, the works displayed are exceptional, particularly as an entire series of drawing instruments was also exhibited (mathematical kits). The practical use of each of these tools is presented through film clips (produced by their collector, to be precise).⁹ As well as the evident pedagogical interest of such operations, they return the drawings to their full magnitude, and also make it possible to better grasp the differences between them depending on whether they were intended for contractual, presentation, survey, or implementation purposes, on a small or large scale.

The second exhibition, “L’art du chantier. Construire et démolir (xvi^e-xxi^e siècle)” (“The Art of the Building Site. Building and Demolishing (16th-21st Century)”), overseen by Valérie Nègre and Marie-Hélène Contal, will be held at the Cité de l’Architecture et du Patrimoine (Architecture and Heritage City) from 9 November 2018 to 11 March 2019.¹⁰ It will question the way in which, since the Renaissance, men have considered, experienced and imagined “the sites on which one builds” in the West. The universality of this subject, outside of the field of construction, architecture and technology, is attested to by the great diversity of observers, the plethora of platforms for distributing images, and public interest. Here, the building site functions as a metaphor for the act of creation, one that is complex and disorganised but always fascinating. It also proves to be the central, constituent site of construction history, as it was, inasmuch as it makes it possible to answer the question of “how”. The image of the building site is decidedly more captivating than that of the finished building, and more vivid because one can fully assess the response to the question of “who”. The architect is knocked off his pedestal to reveal the workmen, politicians, and onlookers, etc. While it demonstrates all the disorder, the imminent danger of the situations and the thickening traffic, the vision of incompleteness also provides a freedom of possibilities in all its potential. The image of the building site is imbued with a sense of hope.

Resulting from a close collaboration between historians of art, technology and society, through a presentation of works produced

9 Alexandre Cojannot and Alexandre Gady (eds.), *Dessiner pour bâtir. Le métier d'architecte au xvii^e siècle*, Paris, Archives nationales / Le Passage, 2017, 352 p. ill.

10 Valérie Nègre (ed.), *L'Art du chantier. Construire et démolir (xvi^e-xxi^e siècles)*, Gand, Snoeck, 2018.

since the Renaissance the exhibition interprets the building site from a perspective that is at once technical, social and political, and artistic. The technical question cannot of course be overlooked. The building site is the place where machines express themselves, and it is characterised by all its scaffolding, cranes and mechanical movements, and the incessant movement of men risking accidents. If one simply looks at the photographic slides of the great urban transformations of the 19th century, such a place might seem to represent nothing more than ruins. However, the building site appears as the symbol of human power and inventiveness. Major works pose numerous challenges left, right and centre. The workman, the hero of the modern day, becomes an acrobat perched on top of towering structures, while the workman on the ground adopts a virile, muscled posture, and the female worker displays all her emancipation and freedom.

At the social and political level, the building site can embody a revolutionary moment, a denunciation of the oppression of the working class by the affluent classes. Most of the constructions of emblematic monuments in towns are captured through photographic images collected in acclaimed albums, as a way of justifying public expenditure. The town now appears merely through the prism of an immense building site. Politicians present themselves in all their glory, yet caricaturists denounce them as corrupt. Urban history often represents the city through the indicative name of the 'city-building site'. It arouses curiosity, provokes disorders, and generates prohibitions. In the collective imagination, it constitutes a dirty *no man's land*, a rubbish tip filled with sweat where all sorts of dealings can occur.

A third section of the exhibition deals with the interactions between the building site and art. In the 1920s, the spectacle of building sites attracted the attention of artists and writers. It was as though the 20th century had invented the cinema to 'speed up construction', both to present finished constructions and to destroy obsolete ones. From that point on, for some, the representation of the building site became more important than its result. In the mid-20th century, the aesthetic of the transitory and the incomplete was evoked.¹¹ The display concludes with

11 We cannot help but cite the exhibition directed by Antonio Bessa and Jessamyn Fiore, held in 2017 at the Bronx Museum of Arts in New York, and in 2018 at the Jeu de

interviews with three builders: Patrick Bouchain opens the building site up to the public by considering it as “a theatre of social reparation”; Martin Rauch sees its transformation through the use of the land as a material of the future; and Marc Mimran considers it as an essential aspect of rationality.

The publication of a European state-of-the-art review of construction history, to which the Francophone Construction History Society contributed, is an important step in the establishment of this field of research.¹² Entitled *L'Histoire de la construction. Relevé d'un chantier européen* ('The History of Construction. Survey of a European Building Site'), the book was originally conceived as a ten-year appraisal covering the period 2004–2014, but quickly became a far broader project with the addition of an anthology comprising around forty reference texts on the subject. Joël Sakarovitch, Antonio Becchi and I began working on this project in 2013, a few weeks after the first Portuguese-Brazilian international conference on construction history (4–6 September 2013) and the first national German conference (7–9 November 2013) under the aegis of the fledgling *Gesellschaft für Bautechnikgeschichte*, founded in Berlin in June 2013. This came right on the cusp of the first national British conference organised by the Construction History Society, which was due to take place in Cambridge the following 11–12 April. Joël did not have the chance to participate. We are witnessing a constant, rapid transformation within the community of construction historians, a sort of fresh start. It seemed clear to us that the first report on construction history in Europe, published in 2004 under the aegis of Antonio Becchi, Massimo Corradi, Federico Foce and Orietta Pedemonte, was becoming increasingly outdated after

Paume in Paris. The exhibition was dedicated to Gordon Matta-Clark, whose vision of the building site proposes a social perspective based on happenings *in situ* (cf. the famous *Conical Intersect* of 1975, bordering on the construction of the Georges Pompidou Museum). See the exhibition catalogue, *Gordon Matta-Clark. Anarchitecte*, Waregem, 2018. The exhibition will continue its journey in Tallinn, Estonia, and is scheduled to return to Waltham (Massachusetts) in the United States in 2019.

- 12 Antonio Becchi, Robert Carvais and Joël Sakarovitch (eds.), *L'Histoire de la construction / Construction History. Relevé d'un chantier européen / Survey of a European Building Site*, Paris, Classiques Garnier, 2 vol., 2018, 1497 p. This work primarily consists of articles in French and English. The second volume also comprises some articles in Italian, Spanish, and German.

ten years.¹³ Construction history had totally changed between 2004 and 2014. We wished to account for this in detail, and to provide a solid grounding for discussions about new directions of research in construction history.

It was for this reason that we encouraged several colleagues and friends to each draught a report on the developments achieved in fifteen different countries.¹⁴ The five presidents of the national European societies helped draught the twelve reports collected in this volume, on their own or collaboratively.¹⁵

In 2015, we asked the authors to help us prepare a list of texts that could be considered as significant in our field, ranging from the first issue of the British journal *Construction History* (1985) to the most recent publications. This allowed us to assemble a varied selection of texts (editorials, articles, introductions to works, etc.) which make up the second volume of the above-mentioned work. This anthology is, of course, intended to serve as a reference for university teaching and research, and to encourage future work and collaborations at the international level. It offers an up-to-date overview of the field, which highlights — if this still needed to be specified — the multiple points of view that construction history presents, along with the different cross-disciplines concerned, etc.

In many respects, the comparison between the situations before and after 2004 reveals a particularly astounding development in the field. A spectacular increase in high-quality research, in terms of the number of books, theses or articles, can be seen in numerous countries, particularly those that have formed a scholarly society and/or organised an international conference. Teaching, seminars, colloquia and summer schools have all also increased. Several projects centred on construction history now receive funding either nationally (grants, National Research Agency funding, etc.) or at the European level (ERC), even if they are

13 Antonio Becchi, Massimo Corradi, Federico Focce, and Orietta Pedemonte (eds.), *Construction History. Research Perspectives in Europe*, Florence: Kim Williams Books/ Associazione Edoardo Benvenuto, Between Mechanics and Architecture. VI, 2004. (www.kimwilliamsbooks.com)

14 The following countries are represented: Germany, Austria, Belgium, Spain, France, Italy, the Netherlands, Scandinavian countries (including Denmark, Sweden, Norway, and Finland), Portugal, the United Kingdom, Russia, and Switzerland.

15 James Campbell (United Kingdom), Robert Carvais (France), João Mascarenhas Mateus (Portugal), Santiago Huerta (Spain), and Werner Lorenz (Germany).

still too few and far between. We are nonetheless not blind to the difficulties involved in obtaining reliable information in quantitative terms since most of the bibliographical databases cannot be searched using the term “construction history”.¹⁶ Moreover, and fortunately, no single conception of what construction history covers in Europe exists. Academic disciplines are not always approached to the same extent depending on the historical traditions of each country, and construction history teaching is still only loosely structured. Lastly, dedicated publication spaces remain scarce (with just two journals and a few fledgling collections). For all that, we hope that this *opus* will fulfil its expectations. These two volumes should nonetheless constitute a guide, a form of European *vade-mecum* for all those interested in construction history. Through this appraisal and anthology, we also wish to achieve a sort of consolidation of the scientific background of the field, much like the recent publication of the second edition of the fundamental work by Karl-Eugen Kurrer, *The History of the Theory of Structures. Searching for Equilibrium*, published by Ernst & Sohn.¹⁷

Lastly, regarding institutional structures, we are pleased to announce the official establishment of a European Federation of Construction History formed after the signing of its Articles of Association last 10 July in Brussels in the Royal Chapel – Protestant Church of Brussels, in the presence of English, German, Belgian, Spanish, French and Portuguese representatives from the sphere of construction history. Upon Antonio Becchi’s initiative, and in the context of the organisation of the sixth international conference in Belgium, the directors of scholarly construction history societies initiated a discussion among themselves to strengthen the cohesion of existing associations, as well as among countries organising international events. The question had in fact been posed, informally, at the time of the selection of the organising country. Following the refusal of certain parties, no steps could be taken. The moment seemed apt to discuss the creation of a common structure: an academy or a federation? The bases of this reflection were three-fold: faced with the disintegration of political institutions in the context of

16 On this matter, see: Andrew Abbot, *Digital Paper. A Manual for Research and Writing with Library and Internet Materials*, Chicago, University Press of Chicago, 2014.

17 This edition is 1212 pages long and presents an increase of 50% compared to the first English edition.

Brexit, it was becoming important to strengthen the identity, interest and visibility of the field of research; for both young researchers and established independent researchers, a common house could serve as a point of attachment, outside the context of national structures; and lastly, given the plethora of data available, a collaborative bibliographic review is needed at the European level. Deemed overly elitist, despite the unprecedented cohesion of existing associations, the idea of an academy was provisionally dismissed, with preference being given to the establishment of a federation, as an initial step. The objectives were the following:

- To promote construction history (also through the introduction of prizes and rewards for the best research as well as the immediate organisation of academic debates on relations with other disciplines);
- To foster a constant flow of information between existing associations;
- To draw up and update an official list of construction history associations;
- To choose the location for and approve the organisation of future international conferences;
- To resolve any conflicts between existing associations; and
- To create and maintain a federal construction history website.

This third *opus of Aedificare* proposes a thematic collection on “The Authorities and Regulations of Work in the Field of Construction (13th–19th Century)”. The contributions came out of a session during the second conference of the *European Labour History Network* held in Paris in November 2017. Its elements have been reviewed and expanded upon, and this collection was coordinated by Nicoletta Rolla, researcher at the Laboratory of Demography and Social History of the *École des hautes études en sciences sociales* (School for Advanced Studies in the Social Sciences), and me. All the articles went through a process of double-blind peer review, as is standard practice for our publication. The convergence, around the year 2000s, between a new interest in the history of industrial relations and a revival of historical studies in the construction sphere allowed us to revise the now caricatural conception of a professional community as the sole authority that regulates and leads the world of work and its

mode of operation. Public institutions of various kinds, either at the city or State level (administrations, courts or scholarly academies), are responsible for overseeing the organisation of trades, labour mobility, salaries, and working times. Corporations that regulate the work of their members themselves can assume numerous forms over time, and, above all, may need to regulate their unincorporated and foreign workforce. Finally, market forces lead contractors to negotiate in trade unions to obtain the best working conditions. Some, after becoming general contractors, succeed in quickly mobilising their workforce and quickly letting them go, without any consideration for social security, where applicable.

The 'Varia' section of the journal presents an article by Ilaria Giannetti, produced in the context of the 'SIXXI – Italian Contribution to 20th-century Structural Engineering' project led by the late Sergio Poretti (1944–2017) and Tullia Iori of the University of Rome 'Tor Vergata'. It concerns a very curious episode in Italian construction history, during the country's colonising and fascist period. In 1935–1936, Italy's rapid conquest of Ethiopia obliged the former to build 134 kilometres of roads and eight bridges in a record time of seven months. To this end, a colossal non-specialised Italian workforce was assembled by two engineers—Guido Sassi and Attilio Arcangeli—with expertise in reinforced concrete. With their proximity to Mussolini's regime, they seized the opportunity to test out new reinforced concrete structures suited to a tropical climate, resistant to the passage of heavy artillery and supplemented by hand-made devices to counterbalance unwanted side effects. The work was carried out at night to avoid the effects of intense daytime heat. Condemned in Europe, the invasion called upon neighbouring countries to put in place economic sanctions that limited Italy's access to raw metal material, which obliged engineers to work autarkically by devising structures without the use of reinforced concrete.

The connection with the dramatic collapse of the viaduct in Genoa last 14 August is inescapable. The search for the causes of the accident raged in the press before the experts had presented their conclusions.¹⁸ Everyone agrees that such catastrophes remain somewhat rare. History,

18 See: *Le Monde*, 16 and 17 August 2018; *Libération*, 16 August 2018; *La Croix*, 16 August 2018, and *Le Figaro*, 16 August 2018.

business and politics were all alluded to. Yet a close consideration of the history of the bridge reveals that it was built in 1967, well before budget austerity measures in Europe. Its builder, the engineer Riccardo Morandi (1902–1978), committed a construction error that, according to Antonio Brencich, Associate Professor in concrete structures, consisted in his having made “an incorrect evaluation of the withdrawal effects of the concrete, producing a non-horizontal road map”. “He miscalculated the strain, over time, of reinforced concrete structures”. Nonetheless, could the solidity of concrete really be assessed at that time? Had a sufficient amount of time passed? Of all the viaducts designed by this individual, only the ones in Florence and Catanzaro in Italy remain in use. The viaduct built over Lake Maracaibo, in Venezuela, partly collapsed in 1964 after an oil tanker crashed into it, while the ones in Agrigento (Sicily, 1970) and Wadi al-Kuf in Libya (1971) were closed in 2016 and 2017, respectively, to prevent the risk of collapse. According to the French engineer Michel Virlogeux, there is no great ingenuity involved in this type of cable-stayed bridge made of prestressed reinforced concrete and atypical pillars. In the same period, “the Germans were starting to make more modern cable-stayed bridges”. Was the position adopted by Morandi innovative, therefore, or reckless?

Furthermore, the confidence placed in concrete needs to be called into question. According to the former president of the Architects’ Association of Genoa, Diego Zoppi: “people thought it was eternal. But we have seen that it only lasts several decades. At the time, people didn’t factor in the constant vibrations of the traffic, because cement forms microcracks and lets air in, which reaches the internal metal structure and causes it to oxidise, explaining the constant maintenance operations required for the Morandi bridge”. Such operations resolved nothing because repairs can sometimes be far more dangerous than any other solution, such as a replacement (destruction/reconstruction) or a diversion (the Gronda project in question involved building a bypass around the town of Genoa to deal with the intensity of the road traffic¹⁹). The architect and engineer Marc Mimram prudently alludes to three original causes for the catastrophe: the ageing of the concrete; undetected

19 Shortly before his death, Riccardo Morandi made the following comment on this subject: “I had designed my bridge in 1965 essentially to facilitate the circulation of cars, not to ensure the passage primarily of trucks.”

corrosion of the stays inside the concrete shaft; and “a more insidious problem in the foundations, connected, for instance, to a dissolution of the soils over time”.²⁰

If criticism is directed at the company in charge of maintaining the bridge, it must be recognised that the latter does not belong to the public domain and that the motorway manager accused, the Atlantia Group, which belongs to the Benetton galaxy, is a private company listed on the stock exchange set on becoming a global leader in the management of transport infrastructure. The State would therefore bear no responsibility for the disaster.

However, the political class in charge of affairs nowadays (the populist coalition) is no stranger to contradiction in apportioning blame, in no particular order, to Brussels, previous governments and the private scapegoat, the franchise holder *Autostrade per l'Italia*. While the European Community is cleared of blame in light of the date of construction of the viaduct, previous governments tried to propose solutions, which Beppe Grillo's movement opposed, and the franchise holder issued an urgent call for tenders on 3 May last year for the consolidation of the upper tie beams of the bridge, which may have been the cause of its collapse.²¹ The financial question is again at the heart of the polemic, at the expense of people's lives.²²

In addition to the precautions to be taken in future to avoid them, the collective memory of such building accidents and their analysis accords construction history an essential function: to assess builders' uncertainty. In the technological age we currently live in, we have understood that accidents are never to be ascribed to fate, but rather to negligence. Were risks not taken once again here? Renzo Piano, who proposed a steel project to rebuild the viaduct in Genoa,²³ was astonished, and rightly so, that with all its technological facilities and excellent engineers, his country was not better equipped to prevent such a catastrophe, asking

20 *Le Monde*, 15—16 August 2018.

21 We do not intend to analyse Italian political tensions here, which are highly complex.

22 Valérie Theis, « Des hommes, des ponts et des drames », *Le Monde*, 8 September 2018, p. 6.

23 On this subject, see: *Le Monde*, 8 September 2018, p. 16, as well as the Italian press on the same date: *Avvenire*, p. 9; *Corriere della sera*, p. 18-19; *Il Secolo XIX*, p. 1-5; *La Repubblica*, p. 14-15, III-IV; *La Stampa*, p. 1, 8-9; *La Verità*, p. 1 and 9.

an essential question: “*Bridges, houses and constructions in general must be treated like human beings.*”²⁴ We produce highly sophisticated diagnostics and cutting-edge technologies that we export all over the world. Yet we do not use them for our own constructions. Why?”²⁵ Construction historians could have a word to say on this.

Robert CARVAIS

24 This clever idea of comparing buildings to human beings, to better understand them, can already be found in a text dating back around ten years written by the Lebanese playwright Wajdi Mouawad, “We Are Buildings”, in *Les tigres de Wajdi Mouawad*, Nantes, Le Grand T, Edition joca seria (coll. Les carnets du Grand T, no. 14), 2009, 53-55. Mechanical metaphors applied to the human body with a didactic, or even repairing, function are age-old. Here, the comment is intended to be of a more general, conceptual nature.

25 Richard Heuzé, « Le résultat d'un demi-siècle d'incurie », *Le Figaro*, Thursday 16 August 2018, p. 3. Italics added.