



Assembling

Fügen

Assembler

Assemblare

ASSEMBLE



081

202
203

Assembling
Assemblare

Knowing How to Build Architecture

Giovanni Conca, Nicola Navone¹

Chosen by the jury and brought together by the editors of this volume, the five works on which we have been invited to comment serve a wide variety of functions and evoke different themes. Nonetheless, what we see before us cannot be assimilated to the comical taxonomy of Jorge Luis Borges' evocative "Chinese encyclopedia," but is composed of a set of experiences demonstrating how a creative focus on aspects of structure and construction can be expressed in different but equally meaningful forms. Our brief analysis of these works (considering the space we have) will attempt to draw some general conclusions.

Making a Little Go a Long Way

Built during the renovation of the highway viaduct over the Hinterrhein, between Bonaduz and Domat / Ems (p. 205), the 326.5 m footbridge re-establishes a link between the walkway and the cycle path on the two sides of the river. Designed by the engineering firm Konzett Bronzini Partner, it is suspended from the left bracket of the viaduct (that is, upstream), according to a construction system aimed at minimizing the quantity of materials required, the assembly time (limited, in fact, to just two months), and construction costs.

Pairs of steel cables, arranged every two meters, support the metal structure of the scaffold, which is made out of square modules—held by a rhomboid bracing and screwed together—on which thin sheets of corrugated concrete rest. Along the horizontal axes, the structure is stabilized by the lattice shape of the scaffold as a whole and by the anchors attaching to the piles of the highway bridge. Construction takes the already constructed walkway as its starting point, and advances module by module, without the need for centering aids.

Of the Bellinzona baths it has been said (even by the architects themselves: Aurelio Galfetti, Flora Ruchat-Roncati, and Ivo Trümpy) that according to the initial blueprints the metal structure of the changing rooms was to have been hung from the reinforced concrete pedestrian walkway. In any case, ever since the creation of the project designs, made for the competition announced in 1967, the structure appears as autonomous and rests

Saper costruire l'architettura

Giovanni Conca, Nicola Navone¹

Scelte dalla giuria e raggruppate dai curatori di questo volume, le cinque opere che siamo stati invitati a commentare presentano una grande varietà di destinazioni funzionali ed evocano temi diversi. Tuttavia, quello che si dispiega davanti a noi non è assimilabile alla spassosa tassonomia dell'«enciclopedia cinese» evocata da Jorge Luis Borges, ma compone un insieme di esperienze che mostrano come una feconda attenzione agli aspetti strutturali e costruttivi possa declinarsi in forme diverse e ugualmente significative. Dall'analisi compendiaria (considerato lo spazio che ci viene concesso) di queste opere proveremo infine a trarre alcune conclusioni generali.

Far molto con poco

Realizzata in occasione dei lavori di risanamento del viadotto autostradale sull'Hinterrhein, tra Bonaduz e Domat / Ems (p. 205), la passerella, lunga 326,5 metri, ristabilisce il collegamento pedonale e ciclabile tra le due sponde del fiume. Progettata dallo studio d'ingegneria Conzett Bronzini Partner, è sospesa alla mensola sinistra (ovvero verso monte) del viadotto secondo un sistema costruttivo volto a ridurre al minimo la quantità di materiale, il tempo di montaggio (limitato, infatti, a soli due mesi) e i costi di realizzazione.

Coppie di cavi d'acciaio, disposti ogni 2 metri, sorreggono la struttura metallica dell'impalcato, realizzata in moduli quadrati, provvisti di una controventatura romboidale e avvitati tra loro, su cui poggiano sottili lastre di calcestruzzo corrugato. Rispetto alle spinte orizzontali la struttura è stabilizzata dalla conformazione a traliccio che assume, nel suo insieme, l'impalcato e dagli ancoraggi alle pile del ponte autostradale. La costruzione avviene dalla parte di passerella già messa in opera, per avanzamenti successivi, modulo dopo modulo, senza l'ausilio di cantine.

Gli stessi architetti del Bagno di Bellinzona, Aurelio Galfetti, Flora Ruchat-Roncati e Ivo Trümpy, hanno talvolta affermato che nelle prime ipotesi progettuali la struttura metallica degli spogliatoi sarebbe stata appesa alla passerella pedonale in cemento armato. Tuttavia, fin dalle tavole per il concorso bandito nel 1967, essa appare autonoma e poggia direttamente al suolo, né

Extension	Use: Infrastructure, non-motorized traffic bridge
Address: Bonaduz, Canton of Grisons	Construction cost: CHF 1.8 million
Client: Municipality of Bonaduz	Timeline: Commission 2012 Start of construction 2021 Completion 2023
Architecture and structure: Conzett Bronzini Partner, Chur	Photos: Gianfranco Bronzini, Yanik Bürkli (p.194–195, p.206, top and bottom)
Project team (construction phase): Gianfranco Bronzini, Martin Deplazes; Luca Infanger, Patrick Ott	

Erweiterung	Nutzung: Infrastruktur, Langsamverkehrsbrücke
Adresse: Bonaduz, Kanton Graubünden	Bausumme: CHF 1.8 Mio.
Bauherrschaft: Gemeinde Bonaduz	Chronologie: Direktauftrag 2012 Baubeginn 2021 Fertigstellung 2023
Architektur und Tragwerk: Conzett Bronzini Partner, Chur	Fotos: Gianfranco Bronzini, Yanik Bürkli (S.194–195, S.206 oben und unten)
Mitarbeit Ausführung: Gianfranco Bronzini, Martin Deplazes; Luca Infanger, Patrick Ott	



Nuign Footbridge, Hinterrhein

The footbridge over the Hinterrhein is as uncomplicated as it is ingeniously designed. Seemingly without effort, the Graubünden-based engineers Conzett Bronzini Partner have managed to deliver an artful structure with minimal means that leaves no questions unanswered, at least in the world of architecture. The challenge was to conduct non-motorized traffic across the river in a flood-proof manner while interfering as little as possible with the surrounding landscape, which is of national significance. Ramps on both sides of the river – one in the municipality of Bonaduz and one in Domat / Ems, to its west – therefore lead up to the *punetta*, which means “footbridge” in Romansh. The construction, which is just over 300 meters long, is designed to be so lightweight that it can hang on delicate steel cables from the southern underside of the existing freeway bridge. It almost looks as if the thin concrete slabs of the walking surface are floating above the surface of the water. Behind the lightness lies a simple structural concept: frames made of angle steel sections are bolted to each other and attached to the cables in such a way that they can be re-

moved at any time and reused elsewhere. The diamond-shaped wind bracing is fastened underneath the slabs. Additional horizontal bars transfer lateral forces to the pillars of the existing reinforced concrete bridge. The national highway bridge for motor traffic was built back in 1979 and although it was designed and built with a suspension footbridge in mind, the footbridge itself was never added. More than forty years after its opening, the freeway had to be widened and reinforced by 1.15 meters on both sides. This safety-related imperative offered the opportunity to realize the footbridge at the same time. The *punetta* Nuign shows not only that inventive engineering approaches are necessary if existing infrastructure is to be optimized, but also that such approaches can sustainably expand the range of users beyond motorists. – kw

Hinterrhein-steg Nuign

Der Steg über den Hinterrhein ist so unkompliziert wie genial entworfen. Scheinbar mühelos haben die Bündner Ingenieure Conzett Bronzini Partner es geschafft, mit minimalen Mitteln eine Baukunst abzuliefern, die zumindest in der Architekturwelt keine Fragen offenlässt. Die Herausforderung bestand darin, den Langsamverkehr hochwassersicher und mit möglichst wenigen Eingriffen in die Landschaft von nationaler Bedeutung über den Fluss zu leiten. Daher führen zwei Rampen auf beiden Uferseiten der Gemeinden Bonaduz und westlich davon Domat / Ems zur höher gelegenen «Punetta», was auf Rätromanisch «Brückensteg» heisst. Die etwas mehr als 300 Meter lange Konstruktion ist so leicht konzipiert, dass sie nur an filligranen Stahlseilen an der südlichen Unterseite der bestehenden Autobahnbrücke hängt. Es wirkt beinahe so, als ob die dünnen Betonplatten der Gehfläche über der Wasseroberfläche schweben. Hinter der Leichtigkeit verbirgt sich ein einfaches statisches Konzept: An den Seilen sind miteinander verschraubte Rahmen aus Winkelprofilen so montiert, dass sie jederzeit wieder entfernt und anderswo weiterverwendet werden können. Der Windverband ist rautenförmig darunter befestigt. Stä-

be übertragen die horizontalen Kräfte auf die Pfeiler der bestehenden Stahlbetonbrücke. Die Nationalstrassenbrücke für den Autoverkehr entstand bereits 1979. Sie wurde zwar schon damals mit Aufhängevorrichtungen für einen Steg ausgerüstet, doch es kam nie zur Umsetzung. Über vierzig Jahre nach ihrer Eröffnung musste die Autobahn beidseitig um 1.15 Meter verbreitert und verstärkt werden. Diese sicherheitstechnische Notwendigkeit bot die Chance, gleichzeitig auch den Steg zu realisieren. An der Punetta Nuign zeigt sich, dass findige Ingenieurleistungen nicht nur für optimierte Infrastrukturbauten notwendig sind. Sie können auch deren Nutzerspektrum über Automobilisten hinaus nachhaltig erweitern. – kw





Nuign Footbridge, Hinterrhein
Hinterrheinsteig Nuign

206
207

Assembling
Assemblare

Giovanni Conca
Nicola Navone

Knowing How to Build
Architecture

directly on the ground, and no other solutions are actually documented. The walkway on the Hinterrhein, however, recalls the hypothesis and demonstrates its appropriateness in the specific context, in its ability, with a single perfectly calibrated gesture, to reconcile all the constraints and demands to which the project responds. “Achieving much with few means”¹ could be this project’s motto. These “few means” are nevertheless the product of profoundly original thinking, of the capacity to pose problems in the right way and approach them without preconceptions, as well as of the detailed design of each of the project’s components (produced ad hoc in a workshop, like the railings which make up, perhaps, the most visible element of the walkway and thus must match the gossamer-fine quality of the work as a whole, which resembles a minute metal filigree). The result is an extremely light image with a subdued elegance.

Reuse and Adapt Rather Than Substitute

In today’s building practice, upgrading the architectural, technological, and energy-efficiency characteristics of historical structures is a topic of ever greater relevance and strategic interest. Facades, in particular, are crucial to the redevelopment of buildings from the twentieth century. No longer able to guarantee compliance with energy requirements, the buildings’ external enclosures are subject to a complete remake, so as to better insulate the building and often to give it a more contemporary feel. These redevelopments are often expensive and sometimes doubtful, because they consume a lot of resources, and fail to consider the architectural value of the original project.

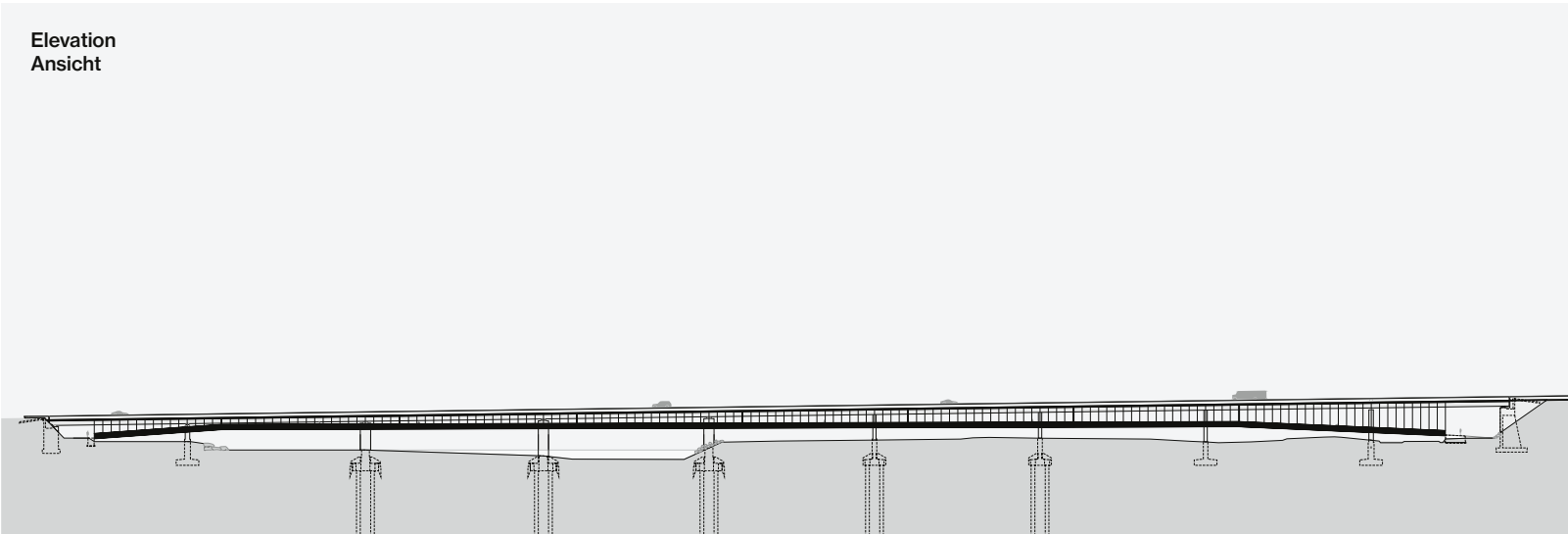
Bucking this trend, is the work done by architect David Vaner on the office building in Dufourstrasse in Basel (p. 209), home of the Basler Kantonalbank BKB, designed in 1966 by the Vischer Architekten studio. Twenty-five years after the prior replacement of the facade, a further adaptation had become necessary to meet heat insulation requirements. The most obvious solution, typical of most retrofits of 1960s office buildings, would have been to replace the aluminum panels with a new, better-performing building enclosure. This is not what happened, though.

Showing a rare analytic ability, as well as a thoughtful attitude far removed from any form of exuberant self-aggrandizement, Vaner evaluated the possibility of adapting the existing facade, maintaining the building’s appearance, and ensuring greater economic and environmental sustainability. The architect soon realized that the aluminum cladding panels had been designed to be detached from the concrete structure and that the cavity inside them was sufficient to accommodate the additional insulation. Almost as though it were a mechanical device, the facade was thus minutely dismantled, each element was cleaned and repolished on site, the gaskets of the frames and the glass were replaced, and finally everything was put back together.

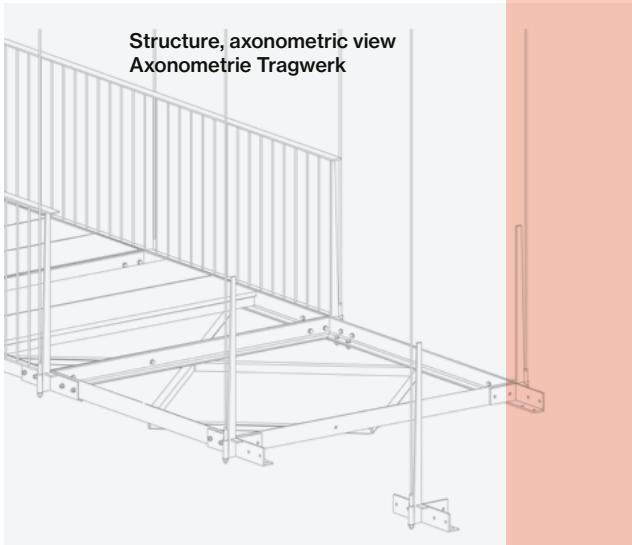
This unusual solution of dismantling and reassembling the facade at Dufourstrasse unexpectedly derives from Vaner’s reflections on Walser architecture. During the same period as the commission for the Basel building, Vaner was also engaged in renovating a typical *Blockhaus* in the Lötschental. This opportunity proved to be invaluable in grasping the high level of planning involved in the traditional architecture of that region,

The lightweight footbridge is suspended from the existing highway by steel cables. Its simple yet sophisticated design provides a long-awaited pedestrian crossing over the Rhine. Der filigrane Steg hängt an Stahlseilen unter der bestehenden Autobahn. Die unkomplizierte, aber raffinierte Konstruktion bietet endlich einen Fussweg über das Wasser des Rheins.

Elevation
Ansicht



Structure, axonometric view
Axonometrie Tragwerk



208	Assembling
209	Assemblare
Giovanni Conca Nicola Navon	Saper costruire l'architettura

si ha alcun documentato riscontro di altre soluzioni. La passerella pedonale sull’Hinterrhein evoca questa ipotesi e ne manifesta l’appropriatezza in questo determinato contesto, per la capacità di conciliare, con un solo gesto perfettamente calibrato, tutti i vincoli e le richieste a cui il progetto deve rispondere. «Conseguire molto con pochi mezzi»² potrebbe essere il motto di quest’opera: pochi mezzi che sono tuttavia il frutto di una riflessione originale e approfondita, della capacità di porre i problemi in modo corretto, affrontandoli senza preconcetti, e del disegno dettagliato di ogni sua componente (prodotta in officina *ad hoc*, come le ringhiere che costituiscono, forse, l’elemento più visibile della passerella e che, dunque, devono accordarsi al carattere quasi diafano dell’opera, come di una minuta filigrana metallica). Ne deriva un’immagine di estrema leggerezza e sommessata eleganza.

Riutilizzare e adattare invece di sostituire

Nella pratica edilizia odierna la riqualificazione architettonica, tecnologica ed energetica del patrimonio costruito è un tema di sempre maggiore rilevanza e interesse strategico. Le facciate, in particolare, sono il nodo nevralgico nella riconversione delle costruzioni del secolo scorso. Non più in grado di garantire il rispetto dei requisiti energetici, gli involucri esterni sono oggetto di un integrale rifacimento, volto a conseguire un migliore isolamento e sovente a dare un’immagine più attuale all’edificio. Si tratta spesso di riqualificazioni economicamente onerose e alquanto discutibili, perché richiedono un elevato consumo di risorse e non considerano il valore architettonico del progetto originario.

In controtendenza è invece l’intervento realizzato dall’architetto David Vaner per l’edificio in Dufourstrasse a Basilea (p. 209), sede della Basler Kantonalbank BKB, progettato nel 1966 dallo studio Vischer Architekten. A distanza di 25 anni dall’ultima sostituzione della facciata, si rendeva necessario un ulteriore adeguamento per soddisfare i requisiti di isolamento termico. La soluzione più ovvia, abitualmente riservata a un edificio per uffici degli anni sessanta, sarebbe stata la sostituzione dei pannelli in alluminio con un nuovo involucro più performante. Così non è stato.

Facendo prova di una rara capacità analitica e dimostrando un atteggiamento alieno da ogni forma di esuberante protagonismo, Vaner ha valutato la possibilità di riadattare la facciata esistente, mantenendo intatta l’immagine dell’edificio e operando per una maggiore sostenibilità economica e ambientale. L’architetto si è infatti reso conto che i pannelli di rivestimento in alluminio erano stati pensati per essere sganciati dalla struttura in calcestruzzo e che l’intercapedine al loro interno era sufficiente per aumentare l’isolamento. Quasi si trattasse di un congegno meccanico, la facciata è stata dunque minuziosamente smontata, ogni elemento è stato ripulito e rilucidato *in loco*, sono state sostituite le guarnizioni degli infissi e i vetri, procedendo infine a riassemblare il tutto.

Questa inusuale soluzione di smontaggio e rimontaggio della facciata in Dufourstrasse deriva inaspettatamente dalle riflessioni di Vaner sull’architettura Walser. Nello stesso periodo dell’incarico per l’edificio di Basilea, Vaner era impegnato anche nella ristrutturazione di una tipica Blockhaus nel Löttschentel. Questa occasione si è rivelata preziosa per cogliere l’elevata progettualità insita nell’architettura tradizionale di quella regione,

Facade Restoration
Project representative:
ObjektWerkstatt, Dornach

Address:
Dufourstrasse 38, Basel,
Canton of Basel-Stadt

Use:
Administrative

Client:
Basler Kantonalbank

Floor area:
5,449 m²

Architecture:
David Vaner Architektur,
Basel

Facade area:
1,101 m² (of which,
glass area 378 m²)

Project team
(construction phase):
David Vaner;
Tonanzin Schindler Perez,
Janic Walder

Construction cost:
CHF 950,000

Timeline:
Commission 2019–2020
Start of construction 2022
Completion 2022

Structural engineering:
Christoph Etter
Fassadenplanungen,
Basel

Photos:
Martin Zeller

Circular economics:
Zirkular, Basel

Special engineering
services:
Gartenmann Engineering,
Basel

Sanierung Fassade
Bauherrschafts-
vertretung:
ObjektWerkstatt,
Dornach

Adresse:
Dufourstrasse 38, Basel,
Kanton Basel-Stadt

Nutzung:
Verwaltung

Bauherrschaft:
Basler Kantonalbank

Geschossfläche:
5 449 m²

Architektur:
David Vaner Architektur,
Basel

Fassadenfläche:
1101m² (davon
Glasfläche 378 m²)

Mitarbeit Ausführung:
David Vaner;
Tonanzin Schindler Perez,
Janic Walder

Bausumme:
CHF 950 000

Tragwerk:
Christoph Etter
Fassadenplanungen,
Basel

Chronologie:
Auftrag 2019–2020
Baubeginn 2022
Fertigstellung 2022

Kreislaufwirtschaft:
Zirkular, Basel

Fotos:
Martin Zeller

Spezialleistungen:
Gartenmann Engineering,
Basel



Dufourstrasse Office Building

The aluminum facade needed to be replaced for a second time. Located on Basel’s Dufourstrasse, the office building had been built in 1966 by Vischer Architekten and renovated in 1994. The intervals are determined by the lifetime indicated by the manufacturer of the post-and-rail construction. In 2021, the proprietor, Basler Kantonalbank, commissioned David Vaner to design a new envelope. But thanks to his discerning eye, that plan was shelved. As a trained carpenter, he recognized the expert design of the hooked aluminum elements. Their joints contained neither silicone nor adhesives. Screwed to the concrete ceilings, all of the elements could be taken down undamaged. Almost as if easy de- and re-installation had been intended all along. Vaner recommended refurbishment rather than replacement. The bank agreed. Rather than requiring new designs, the project called for processes to be creatively planned and the necessary workflows to be organized. The fact that the origin of the elements was identical with their destination helped. They were already of a size to allow them to be transported via the staff elevator to the underground parking garage. Here, they were cleaned in an

on-site wash tunnel, having the stubborn remains of adhesives and dirt removed, then scrubbed and polished with water and cleaning liquid. Thanks to their narrow seals, there was room in the existing window profiles for triple glazing. There is now additional insulation in the cavities of the posts and shutter boxes. Only in the case of two of the 500 elements was it impossible to reuse the original – a ratio that paid dividends, since the decision to maintain the facade saved the client a good deal of money. Which is more than an incidental remark, since only when what is ecologically worthwhile is also economically profitable will the door to the preservation of valuable architectural materials be flung wide open. – cr

Bürohaus Dufourstrasse

Zum zweiten Mal sollte die Aluminiumfassade ausgetauscht werden. Schon 1994 wurde der 1966 von Vischer Architekten errichtete Bürobau in der Basler Dufourstrasse erneuert. Der Rhythmus begründet sich aus der vom Hersteller angegebenen Lebensdauer der Pfosten-Riegel-Konstruktion. Als Besitzerin beauftragte die Basler Kantonalbank 2021 den Architekten David Vaner mit der Gestaltung einer neuen Gebäudehülle. Seiner Weitsicht ist es zu verdanken, dass es dazu gar nicht kam. Denn der gelernte Zimmermann erkannte die hochwertige Verarbeitung der gesteckten Aluminiumelemente. Weder Silikon noch Verklebungen füllten deren Stöße. An die Betondecken geschraubt, können alle Elemente unbeschadet ausgehakt werden. Fast so, als seien die einfache De- und Remontage vorgedacht worden. Vaner empfahl, die Fassade zu sanieren und nicht zu ersetzen. Die Bank stimmte zu. Statt eigener Entwürfe verlangte dieser Auftrag eher die kreative Gestaltung von Prozessen und die Organisation nötiger Abläufe. Hilfreich war, dass Ursprungs- und Bestimmungs-ort identisch blieben. Die Elemente waren bereits so dimensioniert, dass sie mit dem Personenlift in die Tiefgarage transportiert werden konnten.

Dort wurden sie in der vor Ort eingerichteten Waschstrasse von Kleberesten und hartnäckigem Schmutz befreit, anschliessend mit Wasser und Reinigungsmilch geputzt und aufpoliert. Dank schmalen Dichtungsbändern fand in den bestehenden Fensterprofilen auch eine Dreifachverglasung Platz, zusätzliche Dämmung liegt nun in den Hohlräumen der Pfosten und Storenkästen. Lediglich zwei der insgesamt 500 Elemente konnten nicht wiederverwendet werden. Eine Quote, die sich bezahlt macht, denn der Entscheid, die Fassade zu erhalten, sparte der Bauherrschaft gutes Geld. Keine Randnotiz, denn erst wenn sich zu der ökologischen Sinnfälligkeit auch ökonomische Rentabilität gesellt, wird dem Erhalt wertvoller Bausubstanz die Tür weit aufgestossen. – cr





Dufourstrasse Office Building
Bürohaus Dufourstrasse

210
211

Assembling
Assemblare

Giovanni Conca
Nicola Navone

Knowing How to Build
Architecture

Ground floor
Erdgeschoss



where there is a clear propensity to conceive and plan the various aspects of construction according to the greatest economy of means, cleverly exploiting the few resources that are available in the mountains. The far-sightedness of Walser architecture was to pay attention to the question of whether to dismantle the single parts and carry out the construction elsewhere or replace them, but also to their cleaning and maintenance.

This architecture itself, often defined as “spontaneous” (mistakenly suggesting it was unplanned and therefore contrasts with the proclaimed precision of contemporary practices), has proven a particularly topical lesson that Vaner has been able to reprise in the Basel project: clear proof that older interpretations of contemporary concepts like “sustainability,” “circular economy,” “resource efficiency,” and “durability” can prove key in orienting both the theoretical debate and contemporary practices.

To Reinvent Architecture, Reuse!

The project designed by dettling péléraux architectes for the Builders Training Center in Echallens (p.213) also raises several related questions, especially regarding the problem of waste in construction, and the possible re-use of materials and elements.

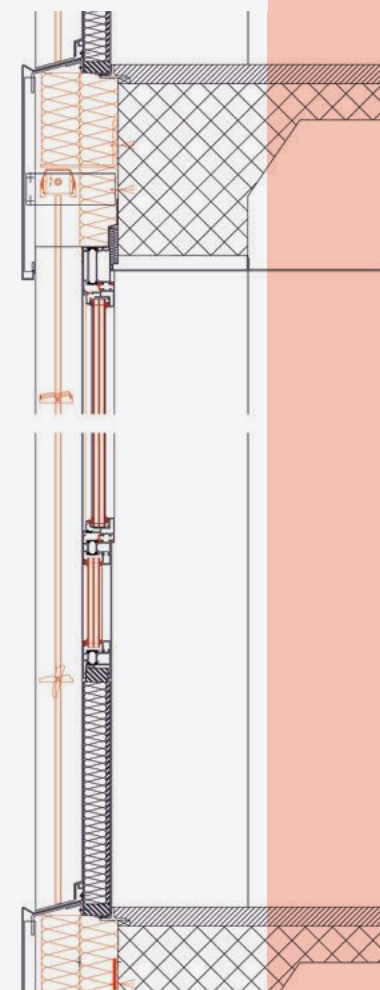
Worryingly, for several decades now, construction has contributed to an enormous waste of resources, producing a huge amount of waste during demolitions as well. Although the problem is now more widely noted, even today the re-use of building components remains a minority practice in Switzerland overall, such that the Centre de formation des métiers de la construction is indeed a pioneering project.

When, in 2017, architects Astrid Dettling and Jean-Marc Péléraux were commissioned to select a location for this vocational school, they considered a number of industrial warehouses, initially foreseeing the possibility of adapting them to new functions. The limits of the existing buildings soon became clear, however, both in terms of surface area and the adaptability of the space. Facing the more immediate possibility of clearing them out entirely and proceeding with a new construction, the two architects decided to act in a more flexible and far-sighted manner. Out of two warehouses built in the 1980s, only the one on the west side of the site has been preserved, together with the administrative building annex to its south. The second warehouse, on the other hand, was demolished, following the principle of so-called “selective deconstruction,” which aimed not only at recycling materials but also preserving some elements to be reused in construction. The first warehouse, transformed into a duplex atelier, gained a central gallery on two levels with classrooms, added in succession on the east side and built from scratch in reinforced concrete. Finally, it also gained another span, which was designed specifically for a laboratory and built to respect the structural exoskeleton of the existing building and therefore make part of the material recovered from the demolished building available for use.

For the infill of the facades, prefabricated concrete panels were taken from the building that had hosted the workers’ quarters. Only minimal adjustments were made to them, and their interior faces (after the removal of the pre-existing insulation) were positioned on the side of the external cladding, so as to



Section (detail)
Detailschnitt



Disassembly – washing – retrofit – glass replacement – reassembly – sealing: the existing facade panels were cleaned, insulated, and re-glazed directly on site for reuse.
Demontage – Waschstrasse – Ertüchtigung – Glasersatz – Remontage – Versiegelung: Die alten Fassadenelemente wurden direkt vor Ort gereinigt, gedämmt und neu verglast wieder eingesetzt.

212 213	Assembling Assemblare
Giovanni Conca Nicola Navon	Saper costruire l'architettura

nella quale traspare una chiara propensione a ideare e pianificare i diversi aspetti della costruzione secondo la massima economia di mezzi e sfruttando con intelligenza le poche risorse disponibili in montagna. La lungimiranza progettuale dell’architettura Walser si manifestava anche nella possibilità di smontare le singole parti per trasportare la costruzione altrove o sostituirlle, ma anche per procedere alla loro pulizia e manutenzione.

Proprio questa architettura, spesso definita «spontanea» (suggerendo erroneamente che non fosse programmata e quindi in contrasto con la conclamata precisione delle pratiche contemporanee), si è rivelata un insegnamento di particolare attualità che Vaner ha saputo riproporre nel progetto di Basilea: prova evidente che l’interpretazione offerta nel passato ai contemporanei concetti di «sostenibilità», «economia circolare», «efficienza delle risorse», «durabilità» si può rivelare preziosa nell’orientare il dibattito teorico e le pratiche contemporanee.

Reimpiegare per reinventare l'architettura

Rispetto a questi temi, anche il progetto dello studio dettling déléraux architectes per il Centre de formation des métiers de la construction realizzato a Echallens (p. 213) solleva diversi quesiti, soprattutto riguardo al problema dei rifiuti edili e al possibile reimpiego di materiali ed elementi nella costruzione.

Da diversi decenni ormai, l’edilizia contribuisce in modo preoccupante a un enorme dispendio di risorse, producendo inoltre con le demolizioni un’ingente quantità di rifiuti. Malgrado il problema sia ormai noto, ancora oggi il riutilizzo di componenti edili permane una pratica largamente minoritaria in Svizzera, rendendo di fatto il Centre de formation des métiers de la construction un progetto pionieristico.

Nel 2017 gli architetti Astrid Dettling e Jean-Marc Péléraux sono stati incaricati di studiare l’insediamento di questa scuola professionale in alcuni capannoni industriali, prevedendo inizialmente la possibilità di adattarli alle mutate funzioni. Tuttavia, ben presto sono apparsi evidenti i limiti degli edifici esistenti, sia in termini di superfici che di adattabilità degli spazi. Di fronte all’eventualità più immediata di fare *tabula rasa* e di procedere con nuove costruzioni, i due architetti hanno pensato di agire in modo più flessibile e lungimirante. Dei due capannoni costruiti negli anni ottanta è stato conservato solo quello a ovest del sito, insieme all’edificio amministrativo annesso a sud. Il secondo capannone è stato invece demolito, seguendo però il principio della cosiddetta «decostruzione selettiva», finalizzata non solo al riciclo dei materiali ma anche alla conservazione di alcuni elementi da poter reimpiegare nella costruzione. Al primo capannone trasformato come atelier a doppia altezza sono state così aggiunte in successione verso est una galleria centrale su due livelli con le sale per i corsi, costruita *ex novo* in calcestruzzo armato, e infine un’altra campata, sempre riservata a laboratorio, realizzata rispettando la trama strutturale dell’edificio esistente e consentendo quindi di utilizzare parte del materiale recuperato dalla demolizione.

Per il tamponamento delle facciate è stato infatti previsto di adoperare i pannelli in calcestruzzo prefabbricati rimossi dall’edificio degli alloggi per gli operai, intervenendo con minimi ritocchi e posizionando la faccia interna, segnata dalla rimozione dell’isolamento preesistente, dal lato del rivestimento esterno,

Redevelopment and New Construction	Electrical and building physics engineering consultant: Effin'Art, Lausanne
Address: Route de Cossonay 28, Échallens, Canton de Vaud	Use: Training centre
Clients: Fédération vaudoise des entrepreneurs et École de la construction, Tolochenaz	Floor area: 5,027 m²
Architecture: dettling péleraux architectes, Lausanne	Construction cost: CHF 16 million
Project team (construction phase): Gaëlle Brecheteau, Adrien Gilliand, Ida-Marie Hoffmann, Gaëlle Jenni	Timeline: Call for tenders 2018 Start of construction 2022 Completion 2023
Civil engineering: Giacomini & Jolliet Ingenieurs, Lutry	Photos: dettling péleraux architectes (p.216), Zak Andrea Zaccone
Building services engineering: Chammartin & Spicher, Lausanne	

Transformation et construction neuve	Cabinet d'Ingénieurs- Conseils en Électricité/ Physique bâtiment : Effin'Art, Lausanne
Adresse : Route de Cossonay 28, Échallens, Canton de Vaud	Affectation : Centre de formation
Maitres d'ouvrage : Fédération vaudoise des entrepreneurs et École de la construction, Tolochenaz	Surface : 5 027 m²
Architecture : dettling péleraux architectes, Lausanne	Coût total : 16 Mio. CHF
Équipe : Gaëlle Brecheteau, Adrien Gilliand, Ida-Marie Hoffmann, Gaëlle Jenni	Chronologie : Appel d'offre 2018 Début du chantier 2022 Achèvement 2023
Ingénieur civil : Giacomini & Jolliet Ingenieurs, Lutry	Photos : dettling péleraux architectes (p.216 en haut), Zak Andrea Zaccone
Ingénieur CVS : Chammartin & Spicher, Lausanne	



Builders Training Center

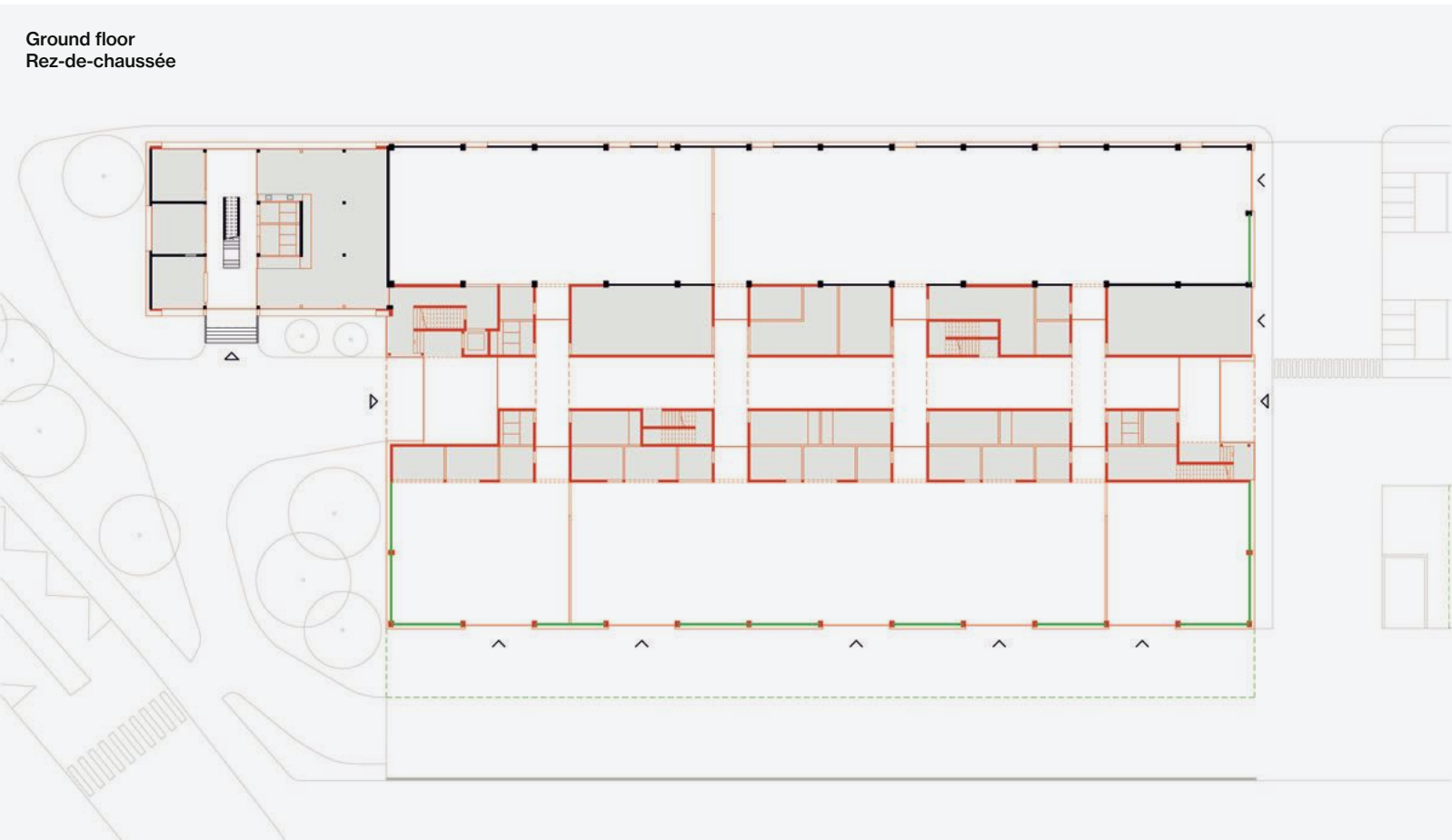
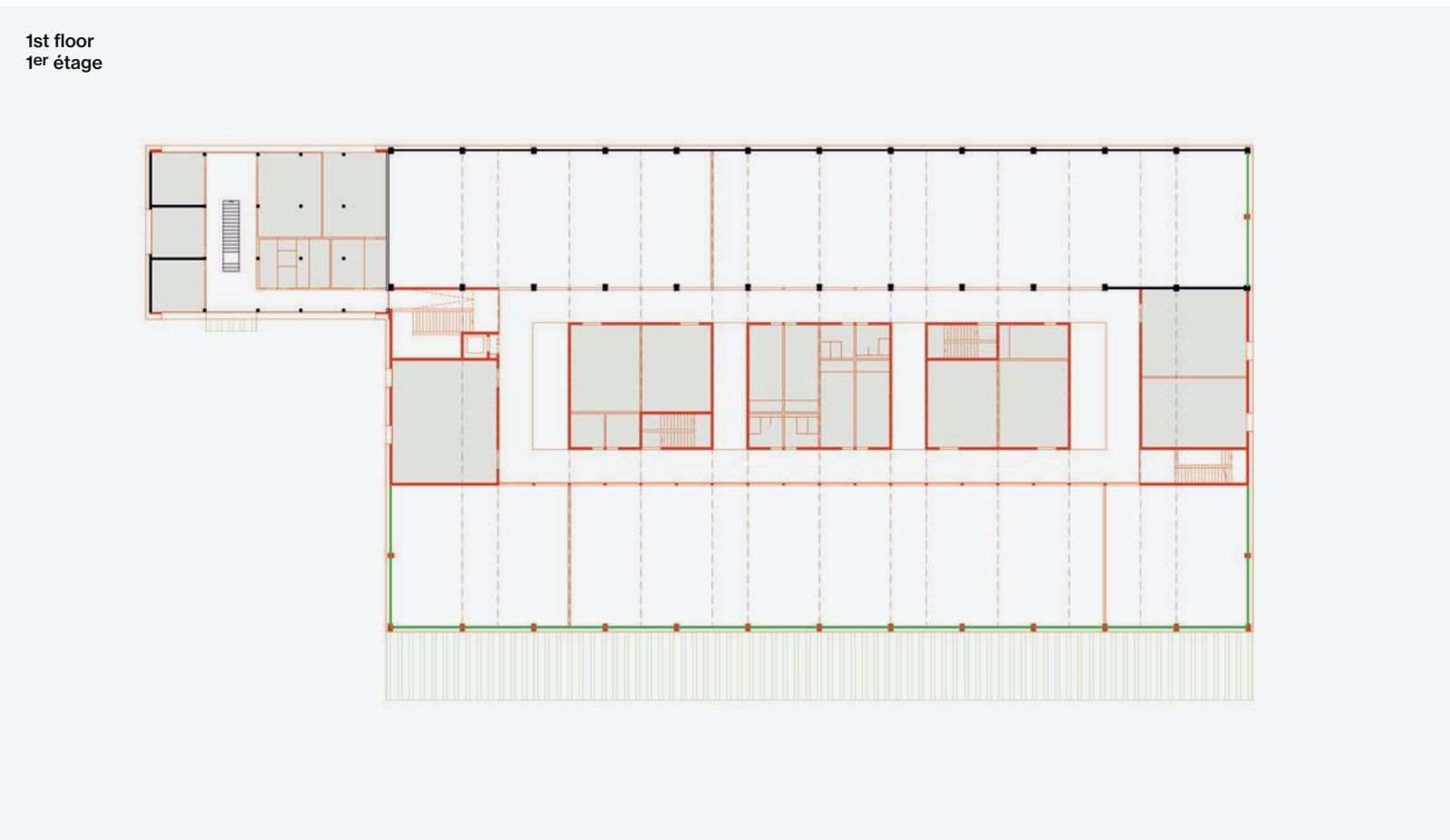
On the outskirts of Échallens, a mighty aluminum facade, reminiscent of a gigantic, gleaming saw blade, stands out from the landscape. The building, which was a bricklaying factory in the 1980s, has been redeveloped into a training center for construction trades. The industrially zoned site originally hosted a U-shaped building opening onto the main road. The new project required the implementation of two separate halls: one dedicated to further education, and the other built to accommodate the apprentice bricklayers for whom there was insufficient space in the existing buildings. Dettling péleraux architectes's proposal consists in creating a compact volume by demolishing one of the existing wings and treating it as a stockpile of materials. The administration building, at the southern end of the plot, as well as a hall, were renovated, while a second hall was built using some of the recycled materials. The architects explain that the reuse of construction elements was made easier by the simplicity of the building's initial assembly construction, which allowed for the dismantling and preservation of elements such as the concrete planks of the old facade, which were then

stored on the sprawling site itself. These planks were later reintegrated in the new construction by inserting them into the grooves of the new metal pillars. The aggregate concrete, which used to face outwards, is now exposed on the inward side, allowing its continued visibility. The new roof, with its north-facing sheds, ensures a homogeneous distribution of light throughout the interior spaces, despite the building's great depth. The sheds are supported by two distinct frames in the plan, with center-to-center distances of three and six meters. The irregularity of the frames remains visible from the outside, accentuating the roof's characteristic jagged effect. Although it preserves the original industrial character of the site, the project adheres to a resolutely forward-looking approach. The architecture, envisioned as a single large tool, succeeds in avoiding any impression of a simple patchwork between past and present. – kw

Centre de Formation de la Construction

À la lisière d'Échallens, une imposante façade en aluminium, évoquant une gigantesque lame de scie étincelante, s'impose dans le paysage. Il s'agit de la transformation d'une ancienne usine de maçonnerie des années 1980 en un centre de formation aux métiers de la construction. Dans la zone industrielle, se trouvait à l'origine un ensemble en forme de « U », ouvert sur la route cantonale. Le nouveau programme nécessitait deux halls : un premier pour la formation continue et un second pour les apprentis maçons, lesquels ne pouvaient pas être accueillis dans les bâtiments existants. Dettling péleraux architectes proposent de créer un volume compact en démolissant une aile, la transformant ainsi en une véritable mine de matériaux. Le bâtiment administratif situé au sud de la parcelle, ainsi qu'un hall, ont été rénovés, tandis qu'un second a été construit en réutilisant une partie des matériaux récupérés. Les architectes expliquent que le réemploi des éléments de construction a été facilité par la simplicité de la construction d'assemblage initiale du bâtiment, ce qui permettait de démonter, sans les abîmer, des éléments tels que les planches en béton de l'ancienne façade, lesquelles ont été stockées sur le vaste site. Ces

planches ont ensuite été réintégrées dans la nouvelle construction en les insérant dans les rainures des nouveaux piliers en métal. Leur face intérieure, aujourd'hui visible avec le béton désactivé, était à l'époque orientée vers l'extérieur, ce qui permet de maintenir une visibilité continue de ces éléments. La nouvelle toiture, composée de sheds orientés au nord, assure un éclairage uniforme de l'ensemble des espaces intérieurs du bâtiment, et ce malgré sa grande profondeur. Ces sheds s'appuient sur deux trames distinctes dans le plan, présentant des entraxes de trois et de six mètres. L'irrégularité des trames demeure perceptible depuis l'extérieur, accentuant ainsi l'effet de dentelures caractéristique de la toiture. Tout en préservant le caractère industriel d'origine du site, le projet s'inscrit dans une démarche résolument tournée vers l'avenir. L'architecture, pensée comme un grand outil, parvient à éviter toute impression d'un simple patchwork entre passé et présent. – kw



avoid an expensive cleaning process. The laminated wood beams and the sheet metal of the existing roof were also used to create a bike shelter, the eastern canopy, and the storage area for construction machinery.

The project thus integrates recycled elements, both already existing and new parts, managing to give the whole building a highly coherent industrial image. The choice of a new sheet metal cladding for the facades unifies this perception on the exterior, avoiding a bricolage aesthetic that such an operation might have entailed. Despite the exemplary nature of the intervention, the practice of selective demolition and the reuse of construction elements appears to be an uphill path for a number of reasons. Undoubtedly, one of these is the mindset of architects and other stakeholders within the construction sector, including clients, who generally retain attachments to traditional wet construction and are often still reluctant to explore other possibilities.

Without a decisive and necessary paradigm shift in building practices, the Centre de formation des métiers de la construction in Echallens and other similar interventions risk being limited to exemplary but improvised episodes. They nonetheless represent an impetus to conceptually and methodologically rethink architecture, making space for a modern *ars combinatoria* capable of responding to the complexities and changing needs of contemporary society.

*Reconciling Constraint and Program
Through the “Grand Gesture”*

The themes suggested by the exhibition hall designed by Ilg Santer Architekten for OLMA, the Swiss agriculture and food fair in St Gallen (p. 222), are radically different. Intended to accommodate an exhibition space of 9000 m² and a foyer of 3400 m², the new building is the result of a two-phase competition organized between 2018 and 2019, in which the Zurich studio took advantage of a collaboration with Lugano engineers Pedrazzini Guidotti in designing the structures. The constraints imposed by the highway are crucial to understanding the structural solution developed by the designers. With the pre-existing rail tunnel, the highway crosses the site along the diagonal. The imposing road infrastructure works, providing roofing, not only made the space available. Here it was also necessary to take account of the configuration of the underground car park, which had already reached an advanced stage in the designs when the competition was announced.

The competition proposal by Ilg Santer Architekten and engineers Pedrazzini Guidotti should therefore be read in light of these constraints, concerning not only the arrangement of the supports, but also the possibility of bracing to prevent wind damage. The decision to go with a double ring of reinforced concrete, supported by a few huge supports, on which the spatial reticular structures covering the exhibition hall and foyer are placed, in fact emerged from the impossibility of resisting torsion and bending stresses solely by means of the attachments to the ground; this resistance is therefore assigned to the upper perimeter ring.² The impossibility is due to the configuration of the platform on which the new building stands. The structural choice is not dictated by a mere formal suggestion (think of the Faculty of

Elements from the old building were reused for the construction of the new hall addition (shown in green).
Pour la construction de la nouvelle partie des halls, des éléments de l'ancien bâtiment ont été réemployés (en vert).

Giovanni Conca
Nicola NavonSaper costruire
l'architettura

così da evitare una dispendiosa pulizia. Le travi in legno lamellare e la lamiera del tetto esistente sono state anch'esse adoperate per realizzare la pensilina delle biciclette, la tettoia a est e il deposito per i macchinari edili.

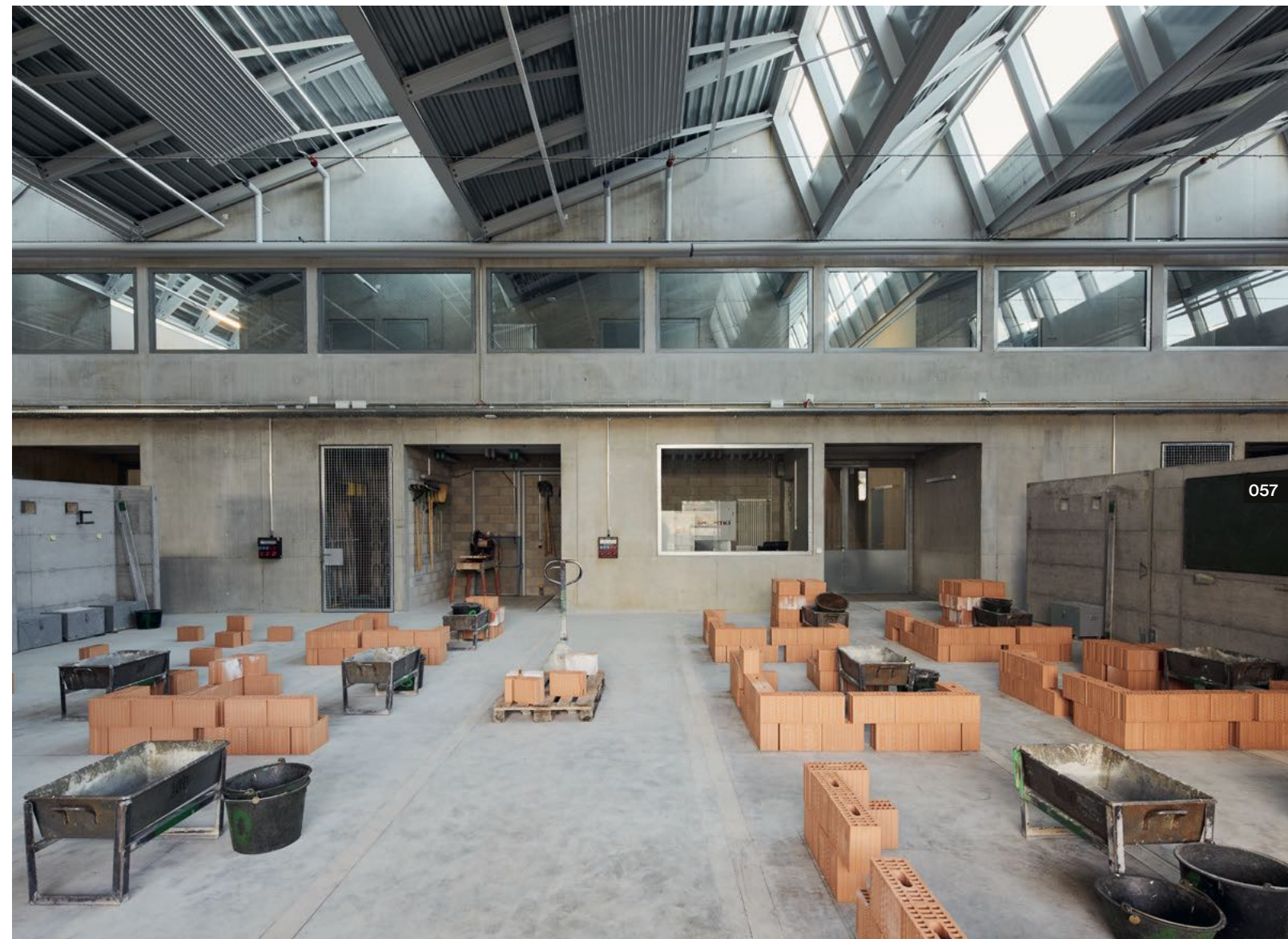
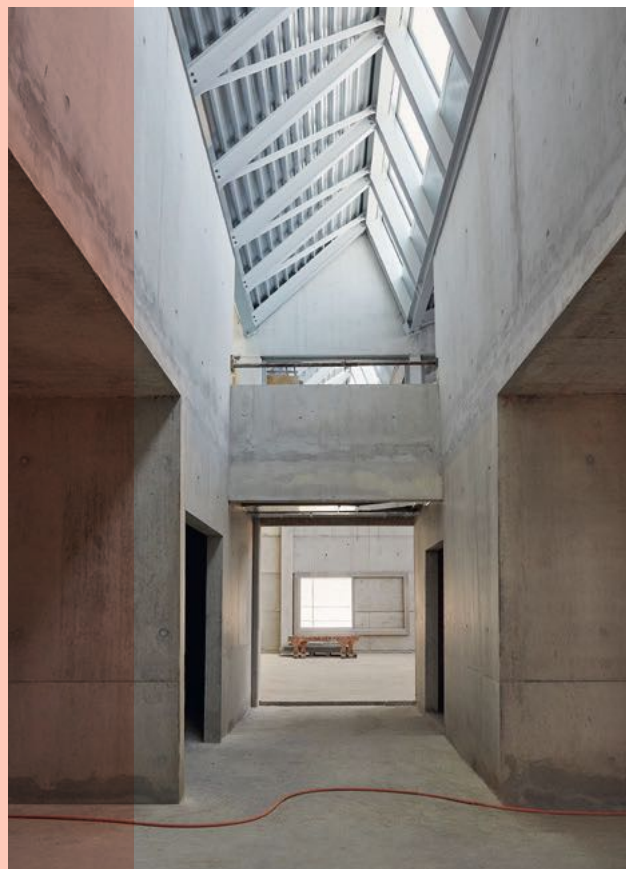
Il progetto integra dunque elementi di recupero, parti esistenti e nuove, riuscendo a conferire all'insieme un'immagine industriale di grande coerenza. La scelta di un nuovo rivestimento in lamiera per le facciate unifica la percezione dall'esterno, evitando un'estetica «da bricolage» che una simile operazione avrebbe potuto comportare. Malgrado l'esemplarità dell'intervento, la pratica della demolizione selettiva e del riutilizzo di elementi costruttivi appare un percorso in salita per diverse ragioni. Una di queste è senz'altro la *forma mentis* degli architetti e degli altri attori del settore edile, compresa la committenza, che permane perlopiù legata alla costruzione tradizionale a umido e spesso è ancora restia ad esplorare altre possibilità.

Senza un deciso e necessario cambio di paradigma nel modo di costruire, il Centre de formation des métiers de la construction a Echallens e altri interventi analoghi rischiano di limitarsi a episodi esemplari ma estemporanei, mentre rappresentano uno stimolo per ripensare concettualmente e metodologicamente l'architettura, dando spazio ad una moderna «ars combinatoria» capace di rispondere alle complessità e alle mutevoli esigenze della società contemporanea.

Conciliare vincoli e programma attraverso un «grande gesto»

Radicalmente diversi sono i temi evocati dalla SGKB Halle disegnata dallo studio Ilg Santer Architekten per OLMA, la Fiera svizzera per l'agricoltura e l'alimentazione di San Gallo (p. 222). Destinato ad accogliere uno spazio espositivo di 9 000 m² e un foyer di 3 400 m², il nuovo edificio è l'esito di un concorso in due fasi organizzato tra il 2018 e il 2019, nel quale lo studio zurighese si è avvalso, per la concezione delle strutture, della collaborazione degli ingegneri pedrazzini guidotti di Lugano. Cruciali per comprendere la soluzione strutturale sviluppata dai progettisti sono i vincoli imposti dal tracciato dell'autostrada che, con la preesistente galleria ferroviaria, attraversa il lotto lungo la diagonale. Gli imponenti lavori di copertura dell'infrastruttura viaria non solo hanno reso disponibile lo spazio necessario al nuovo fabbricato, ma hanno anche dettato le condizioni a cui dovevano sottostare gli appoggi della struttura, per i quali era anche necessario tenere conto della configurazione del parcheggio sotterraneo, giunto a una fase progettuale avanzata nel momento in cui veniva bandito il concorso.

La proposta concorsuale di Ilg Santer Architekten e ingegneri pedrazzini guidotti va dunque letta alla luce di questi vincoli, che non riguardano soltanto la disposizione degli appoggi, ma anche la possibilità di controventamento. La scelta di ricorrere a un duplice anello in calcestruzzo armato, sostenuto da pochi appoggi ciclopici, su cui sono posate le strutture reticolari spaziali che coprono la sala espositiva e il foyer, deriva infatti dall'impossibilità, per la configurazione della piattaforma su cui sorge il nuovo fabbricato, di affidare agli attacchi al suolo la resistenza alle sollecitazioni torsionali e flessionali, che viene così assegnata all'anello perimetrale superiore.³ La scelta strutturale non è dunque dettata



The old elements reintegrated on-site remain visible in the interior facade.
Les anciens éléments réintégrés sur place restent visibles sur la façade intérieure.



As travelers arrive at the Bellinzona train station, they instinctively direct their gaze southward. From the slightly elevated perspective, their eyes scan along the rooftops of the old town, up toward the battlements of Castel Grande, and come to rest in the depths of the forested hills on either side of the Magadino plain, stretching toward Lake Maggiore. Very few, however, will turn to look in the opposite direction – past the cluster of warehouse buildings behind the tracks and up toward the old church of Daro. Those who do will see a long, glazed volume seemingly hovering just above the treetops beside the bell tower. Though only five minutes from the main station of Ticino's capital city, the property is so steep that, until recently, no one dared build on it. But the question of densification has now reached even this southern canton. So, Guidotti Architetti and architect Andrea Frapolli – supported by the engineering firm pedrazzini guidotti – took up the challenge. A smart structural solution was key to making space here for the four identical apartments. The building is anchored into the steep slope at just four points. The single-story volume is supported and elevated above the

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ground from these points. This balancing act not only avoids costly excavation work but also creates a shaded space beneath the building. Integrated into the existing landscape, this area serves as the pedestrian link to the historic church. Along this path, four concrete access cores are rhythmically spaced, with the residential volume constructed from steel IPE beams floating above. The structure of the building generates a dynamic layering of spaces: the naturally sloping topography shapes the lowest level with entrances into each unit; above that, there is the communal terrace shaded by the hovering steel volume; and, at the very top, a private rooftop garden. Inside, light-weight partition walls, wooden ceilings, and seamless floors add warmth and domestic comfort, in contrast to the exposed raw steel beams. The additive construction method allows for a flexible room layout around a central core containing the sanitary spaces. Yet, the kitchens and living rooms of all the units are positioned along the front facade, where the view extends through tall, floor-to-ceiling wooden windows, across the treetops, and out to the Magadino plain. — *fr*

Arrivando alla stazione di Bellinzona, gli occhi di chi viaggia si rivolgono quasi automaticamente verso sud in cerca di sole. Dalla prospettiva appena rialzata, lo sguardo sfiora i tetti della città vecchia e si solleva a raggiungerli merli di Castel Grande, per poi scendere e soffermarsi sulle colline boschive da entrambi i lati del Piano di Magadino. Sullo sfondo, si staglia il blu del Lago Maggiore. Tuttavia, sono pochi quelli che si dirigeranno oltre il gruppo di magazzini situato dietro i binari e verso la vecchia chiesa di Daro. Chi lo facesse vedrebbe – appena dietro le cime degli alberi – un volume in vetro di forma allungata, sospeso accanto al campanile. Sebbene disti appena cinque minuti dalla stazione della capitale ticinese, il terreno è così scosceso che fino a poco tempo fa nessuno aveva voluto costruirvi. Tuttavia, la questione della densificazione territoriale ha raggiunto anche il cantone del sud. E così lo studio Guidotti Architetti e l'architetto Andrea Frapolli – con il sostegno dello studio di ingegneria pedrazzini guidotti – hanno accettato la sfida.

Solo l'adozione di una soluzione statica ingegnosa, infatti, ha permesso di creare lo spazio per quattro appartamenti identici. L'edificio poggia sullo scosciamento solo in quattro punti,

sui quali si regge il volume a un piano degli appartamenti, che dunque è sollevato rispetto al suolo. Tale gioco di equilibrio non solo ha evitato impegnativi lavori di scavo, ma ha creato anche un ombreggiato livello inferiore. Il collegamento per raggiungere a piedi la storica chiesa è incastonato nel paesaggio rimasto intatto. I quattro nuclei di accesso in calcestruzzo scandiscono il percorso a intervalli ritmici, mentre al di sopra si trova il blocco residenziale costruito con travi IPE. La struttura portante dell'edificio produce un'interessante stratificazione degli spazi: al livello inferiore il pendio naturale con l'accesso alle unità abitative, poi un'ombreggiata terrazza comune al di sotto del blocco residenziale in acciaio, e sopra un giardino pensile privato. L'inserimento di pareti in materiale leggero, soffitti in legno e pavimenti colati conferisce agli interni un carattere accogliente, insieme all'acciaio grezzo a vista delle travi. Il metodo di costruzione additivo consente un'articolazione flessibile degli ambienti intorno al nucleo centrale con bagno. Di lì, infatti, la vista oltrepassa le finestre in legno a tutta altezza e spazia verso le cime verdi della vegetazione, fino alla Piano di Magadino. - *fr*

Nuovo edificio	Destinazione d'uso: Residenziale
Ubicazione: Via alla Chiesa, Bellinzona, Cantone Ticino	Superficie utile: 652 m ²
Committenza: Archetipo Immobiliare, Monte Carasso	Appartamenti: 4
Architettura: Guidotti Architeti, Monte Carasso e Andrea Frapolli Architetto, Monte Carasso	Cronologia: Studio 2015 Inizio dei lavori 2022 Completamento dei lavori 2024
Team di progetto (realizzazione): Elia Antognini, Alessia Barbera, Alessandro Malpetti, Simone Ramasco, Alex Schwaller	Foto: Guidotti Architeti, Sabrina Montiglia (p.220 in alto), Marcelo Villada Ortiz (p.220 al centro e in basso)
Progetto strutturale: ingegneri pedrazzini guidotti, Lugano	

Giovanni Conca
Nicola Navone

Architecture and Urban Planning at the University of São Paulo in Brazil, by João Batista Vilanova Artigas but also of the competition project for the multiuse townhall in Losone by Livio Vacchini,³ which, unlike the realized building, presented a structure very similar to the exhibition center in St Gallen). Instead, it is dictated by a structural necessity and is the result of an interaction, right from the early design phases, between architects and engineers.

While retaining the tripartite division of the elevations in the competition project, reflected in the plans by the triple spatial sequence consisting of the square, foyer, and exhibition hall, the completed building has lost some of the contained and concise character suggested by the perspectives accompanying the first proposal. Likewise, it was necessary to abandon the construction of the shelter covering the entrances close to the main square, for reasons of cost.

The SKGB exhibition hall should be placed in a fully twentieth-century tradition of structural “grand gestures,” based on the search for the greatest amount of light. In contemporary debate, dominated by discourse on sustainability and its various corollaries, all this might seem an outdated legacy, if we ignore the specificity of the building. That specificity is that it offers a vast covered space which lends itself to multiple uses, present and future, and thus leads to a possible permanence of the form, all while varying the function.

A steep slope on the lower part of the Daro hill, behind the station of Bellinzona, and a short distance from the monumental complex of the Santi Quirico e Giulitta church, is the site chosen by Guidotti Architetti and Andrea Frapolli to build four adjacent apartments (p.218). The steep topography and the absence of a road providing access to the plot suggested using a structure consisting of four reinforced concrete cores, founded on micropiles, which accommodate the spiral staircases along a vertical distribution, and host a double metal truss at the top, with reticular beams supporting the structure of the apartments, which are distributed along a single floor. A large terrace then opens out between the volume suspended in the void and the slope, equipped with its own autonomous structure in steel. From here one can access the cores on the vertical distribution. This terrace, a genuine “threshold space”⁴ intended for social interaction, is reached via two double-ramp staircases arranged along the path running parallel to the contour lines, extending the path leading to the Daro church. The apartments have a central service strip and, on both sides, freely definable spaces, completely open towards the city and the hill. The height of their location, approximately the same as the fortress of Castelgrande, generates a unique situation of proximity and at the same time a distance from the urban fabric.

The construction is clearly visible, both on the exterior and interior. Observed from the city, the intrados on the lower floor reveals the metal character of the construction, along with the wooden slat cladding on the shorter sides of the building, and the wooden structure of the apartment ceilings. Forming a neat line that is slightly bent towards the east to follow the terrain, and emphasized by the shadows projected on the ground, the house

Giovanni Conca
Nicola Navon

Saper costruire
l'architettura

da una mera suggestione formale (pensiamo alla Facoltà di Architettura e Urbanistica dell’Università di San Paolo in Brasile, di João Batista Vilanova Artigas, ma anche al progetto di concorso per la Sala polivalente di Losone di Livio Vacchini,⁴ che, diversamente dall’edificio realizzato, presentava una struttura molto simile a quella della Halle di San Gallo), bensì da una necessità strutturale ed è il frutto dell’interazione, fin dalle prime fasi progettuali, tra architetti e ingegneri.

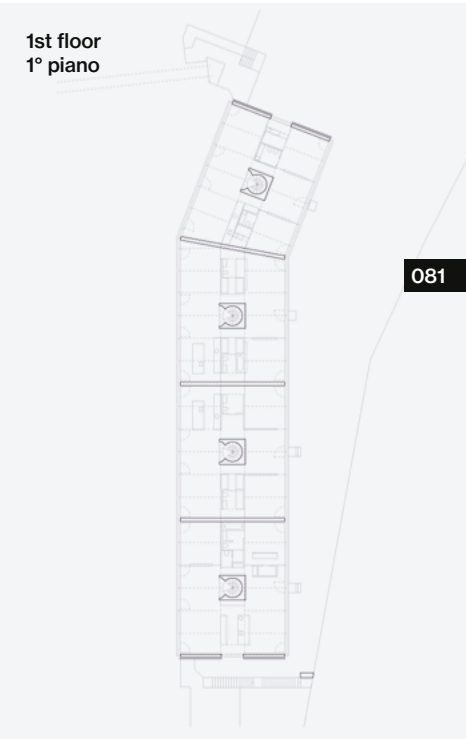
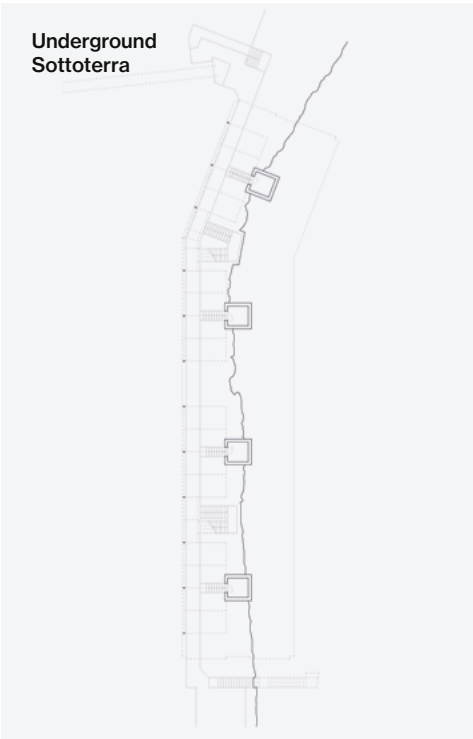
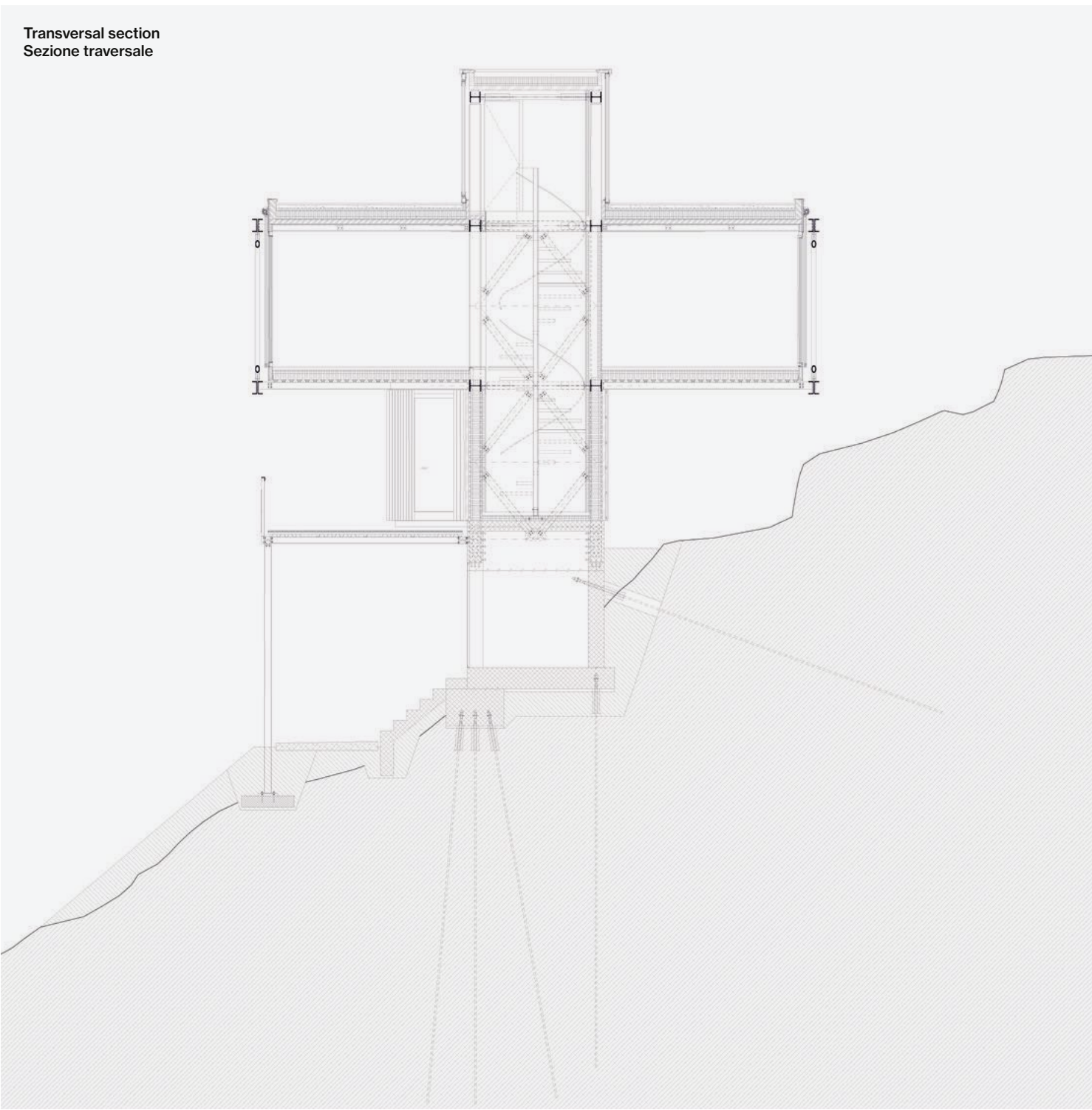
Pur conservando la tripartizione degli alzati del progetto di concorso, riverberata in pianta dalla triplice sequenza spaziale costituita da piazza, foyer e sala espositiva, l’edificio realizzato ha perso un poco del carattere lapidario suggerito dalle prospettive che accompagnavano la prima proposta, così come si è dovuto rinunciare, per ragioni di costi, alla costruzione della pensilina che riparava gli ingressi verso la piazza principale.

La SKGB Halle si iscrive in una tradizione, pienamente novecentesca, di «grandi gesti» strutturali fondati sulla ricerca della massima luce. Nel dibattito contemporaneo, dominato dal tema della sostenibilità e dai suoi diversi corollari, tutto questo potrebbe apparire un retaggio inattuale, se non considerassimo la specificità dell’edificio, ossia di offrire un vasto spazio coperto che si presta a molteplici usi, presenti e futuri, e dunque a una possibile permanenza della forma pur variando la funzione.

Costruire sul declivio

Un ripido pendio sulla collina di Daro, alle spalle della stazione di Bellinzona e a breve distanza dal complesso monumentale della chiesa dei Santi Quirico e Giulitta, è il lotto scelto da Guidotti Architetti e Andrea Frapolli per costruire quattro unità d’abitazione contigue (p. 218). La topografia acclive e l’assenza di una strada d’accesso alla parcella hanno suggerito di adottare una struttura costituita da quattro nuclei in calcestruzzo armato, fondati su micropalificazioni, che accolgono le scale a chiocciola della distribuzione verticale e portano alla sommità un duplice traliccio metallico, che regge attraverso travi reticolari la struttura degli appartamenti, distribuiti su un piano. Tra il volume sospeso nel vuoto e il declivio si distende un’ampia terrazza provvista di una struttura autonoma, pure in acciaio, da cui si accede ai nuclei della distribuzione verticale. A questa terrazza, vero e proprio «spazio soglia» destinato all’interazione sociale,⁵ si giunge attraverso due scale disposte lungo il viottolo che corre parallelo alle curve di livello, prolungando il cammino che conduce alla chiesa di Daro. Gli appartamenti presentano una fascia centrale di servizio e, sui due lati, ambienti liberamente modulabili, completamente aperti verso la città e la collina. La quota a cui si trovano, all’incirca quella della rocca del Castelgrande, genera una singolare condizione di prossimità e al tempo stesso di distanza dal tessuto urbano.

La costruzione si palesa schiettamente, all’esterno come all’interno. Osservato dalla città, l’intradosso del solaio inferiore manifesta la natura metallica della costruzione, mitigata dal rivestimento in doghe di legno dei lati minori del fabbricato e dalla struttura lignea del soffitto degli appartamenti. Con la sua linea netta, leggermente piegata verso est per seguire il terreno e rafforzata dall’ombra proiettata al suolo, la casa diventa una sorta di limite all’edificazione puntiforme che si inerpica, senza alcun ordine, sui fianchi della collina. L’edificio si inserisce in una topografia



The single-story residential wing is suspended on a steel structure over the steep terrain. Four concrete cores provide access from the shaded garden below. Il blocco residenziale a un piano poggia su una costruzione di acciaio sul terreno scosceso. Quattro blocchi in cemento lo collegano al giardino sottostante.



St. Galler Kantonalbank Hall OLMA

If the locals are to be believed, Ostschweizerische Land- und Milch-wirtschaftliche Ausstellung OLMA, an agriculture and dairy farming trade show that lasts for one week during the fall, is actually a season all of its own. The exhibition site in St. Fiden, a district in St. Gallen's north-east, has been growing since the early 1950s. A further expansion was blocked by “Component Project 3rd Pipe Rosenberg,” planned by the Federal Roads Office, also known as ASTRA. The two organizations reached a compromise: for the tunnel renovation, ASTRA received land from the trade fair organizer, Olma Messen. In return, Olma Messen received permission to build over the top of the highway. This layering of functions called for a correspondingly unorthodox structural solution. The only possible bearings on which to rest the events hall were the walls between the highway lanes that cross the site. The load-bearing system is seated on these at twelve symmetrically arranged points around the foyer and the hall. A concrete box-girder construction distributes the forces among these points. As with bridge construction, the frame is erected from 5.2-meter-long prestressed components. As a result

of the rigorously implemented structural concept, the corners of the foyer need no supports and are entirely glazed. This lends the building a lightness and transparency rarely seen in exhibition centers. Extending beyond the ingenious supporting structure is the roof, a five-meter-high steel Mero space frame. For want of affordable alternatives, both the construction and the team that would install it had to be brought in from China. Devoid of supports, the space frame spans the entire multi-function hall, which can accommodate gatherings of up to 12,000 people. The structural feat is rendered tangible by the rough surfaces of the concrete box columns. Described by Ilg Santer as “elephant’s feet,” they also enclose service lines and access to the office spaces. The latter are located in the fish-belly structure that spans the foyer, and operate independently of trade fair activities. Contrasting with the craggy grace of the concrete supports and the colossal presence of the hall, the finely designed details of fittings made from slender white spruce slats tie the architecture back to the human scale. – rz

St. Galler Kantonalbank- Halle OLMA

Glaubt man Einheimischen, gilt die Herbstwoche der Ostschweizerischen Land- und Milchwirtschaftlichen Ausstellung OLMA als eigene Jahreszeit. Seit Anfang der 1950er Jahre wächst im Stadtteil St. Fiden im Nordosten von St. Gallen das Messegelände. Einem weiteren Ausbau stand das «Teilprojekt 3. Röhre Rosenberg» vom Bundesamt für Strassen ASTRA im Weg. Doch die beiden Akteure haben einen Kompromiss gefunden: Das ASTRA bekam für die Tunnelsanierung Land von den Olma Messen. Im Gegenzug durften diese über der Autobahn bauen. Diese Überlagerung erforderte eine ungewöhnliche statische Lösung. Denn als Auflager des Tragwerks der Eventhalle kamen nur die Zwischenwände der diagonal darunter querenden Fahrspuren in Frage. Symmetrisch sind die zwölf Auflagerpunkte rund um Foyer und Halle auf ihnen angeordnet. Darüber verteilt ein umlaufender Betonhohlkasten die Kräfte. Wie beim Brückenbau ist dieser in vorge-spannten Teilstücken errichtet. Als Resultat des konsequent umgesetzten Tragwerkkonzepts bleiben die Ecken des Foyers stützenfrei und sind vollständig verglast. Das verleiht dem Haus eine Leichtigkeit und Transparenz, die bei Messehallen selten ist.

Über das clevere Tragsystem hinweg erstreckt sich das Dach als fünf Meter hohes Raumbachwerk aus Stahl im sogenannten Merosystem, das mangels bezahlbarer Alternativen aus China importiert werden musste – samt Montageteam. Stützenfrei überspannt es die multifunktionale, dreizehn Meter hohe Halle mit einer Fläche von 9.500 Quadratmetern, 12.000 Personen finden in ihr Platz. Eine Lichtsteuerung in der Halle und das seitlich und zenital einfallende Tageslicht im Foyer unterstreichen die atmosphärische Qualität der Räume. Der statische Kraftakt ist in den rauen Oberflächen der betonierten Hohlstützen mit den Händen zu greifen. Von Ilg Santer als «Elefantenfüsse» bezeichnet, bergen sie auch Technikversorgung und Erschliessung der Büroflächen. Sie liegen im Fischbauchträger, der das Foyer überspannt und funktionieren unabhängig vom Messebetrieb. Im Gegensatz zur schroffen Anmut der Betonstützen und zur kolossalen Erscheinung der Halle schaffen die feinen Details der Einbauten aus schmalen weissen Fichtenholzplatten einen Bezug zum menschlichen Massstab. – rz

222 223	Assembling Assemblare
Giovanni Conca Nicola Navone	Knowing How to Build Architecture

becomes a sort of limit to the point-like distribution of structures that advance up the hill in no particular order. The building fits into a complex topography without altering it, unlike what usually happens in Ticino in similar situations. It continues the research of its creators on the structural and spatial potential of steel construction and, more generally, their research on the expressive potentials of dry construction.

At the Crossroads between Architecture and Engineering

Despite the diversity of the works discussed together here, there are at least two points we would like to emphasize in conclusion. The first is that the challenges of the present time, however unexpected and complex, can find answers through the study and reinterpretation of the past. Architecture is a cumulative discipline too, and knowledge of history—understood in its broadest sense, including the history of construction practices, structural conceptions, and the production and processing of materials—provides materials that can help us to question habitual practices, starting from the very way we consider the questions and problems we are called upon to resolve. The question is with whose eyes we look on this legacy of experiences: not so much (or not only) the eyes of the scholar or of someone who wants to “measure a process of evolution,” but rather those of someone trying to nourish their imagination by conceiving of their profession “in terms of hypotheses, of problems to be solved, of possible inventions.”⁵

In this aspect there lies a fertile and profound originality, even if it is too often underestimated, to the detriment of the simple invention of forms and spaces. This attitude consists in knowing how to pose questions in a critical spirit, without settling for established attitudes and practices, and instead patiently and tenaciously seeking the most appropriate solution to a given problem. In this, the works presented share a common attitude, despite the variation in their functional destination, size, or the economic commitments required. This attitude is not only justified in its search for conceptual, structural and constructive precision but is at the same time part of the mentality of the architect and engineer (for whom “in most cases, inventing is adapting already acquired knowledge or experience: conceiving new combinations beginning from structural elements or already familiar materials; replacing a material or type of material or type of structure with another: adapting”). It is coming to recognize, with a proud kind of modesty, that an impeccable *restoration* of a facade can exhibit a blazing intelligence, more than a thousand formal gestures.

New Construction	Structural engineering (construction phase): Meichtry & Widmer, Zurich
Address: Splügenstrasse 12, St. Gallen, Canton of St. Gallen	Landscape architecture: META Landschaftsarchitektur, Basel
Client: Olma Messen, St. Gallen	Use: Trade fair and convention center
Architecture: Ilg Santer Architekten, Zurich	Floor area: 13,974 m²
Project team (construction phase): Andreas Ilg, Marcel Santer; Ivana Andersen, Ebru Baskurt, Iris Durot, Cédric Hirtz, Markus Huber Recabarren, Agnieszka Karwacka, Igor Karwacki, Vitor Lamego, Daniel Laubrich, Astrid Marshall, Severin Marti, Luca Prisco, Raquel de los Rios Torres, Jana Sedlakova	Construction cost: CHF 175 million (including highway cap) CHF 75 million (hall only)
Structural engineering (project planning): Ingegneri Pedrazzini Guidotti, Lugano	Timeline: Competition 2020 Start of construction 2021 Completion 2024
	Photos: Peter Habe (p.198–199) Felix Krumbholz, Stephan Rappo

Neubau	Tragwerk (Ausführung): Meichtry & Widmer, Zürich
Adresse: Splügenstrasse 12, St. Gallen, Kanton St. Gallen	Landschaft: META Landschaftsarchitektur, Baselz
Bauherrschaft: Olma Messen, St. Gallen	Nutzung: Messe- und Eventhalle
Architektur: Ilg Santer Architekten, Zürich	Geschossfläche: 13.974 m²
Mitarbeit Ausführung: Andreas Ilg, Marcel Santer; Ivana Andersen, Ebru Baskurt, Iris Durot, Cédric Hirtz, Markus Huber Recabarren, Agnieszka Karwacka, Igor Karwacki, Vitor Lamego, Daniel Laubrich, Astrid Marshall, Severin Marti, Luca Prisco, Raquel de los Rios Torres, Jana Sedlakova	Bausumme: CHF 175 Mio. (inkl. Überdachung Autobahn) CHF 75 Mio. (nur Halle)
Tragwerk (Projektplanung): Ingegneri Pedrazzini Guidotti, Lugano	Chronologie: Wettbewerb 2020 Baubeginn 2021 Fertigstellung 2024
	Fotos: Peter Habe (S.198–199), Felix Krumbholz, Stephan Rappo (nächste Seite oben)

Giovanni Conca
Nicola Navon

Saper costruire
l'architettura

complessa senza alterarla, diversamente da quanto accade di solito in Ticino in situazioni analoghe, e prosegue la ricerca dei suoi autori sul potenziale strutturale e spaziale della costruzione in acciaio e, più in generale, sul valore espressivo della costruzione a secco.

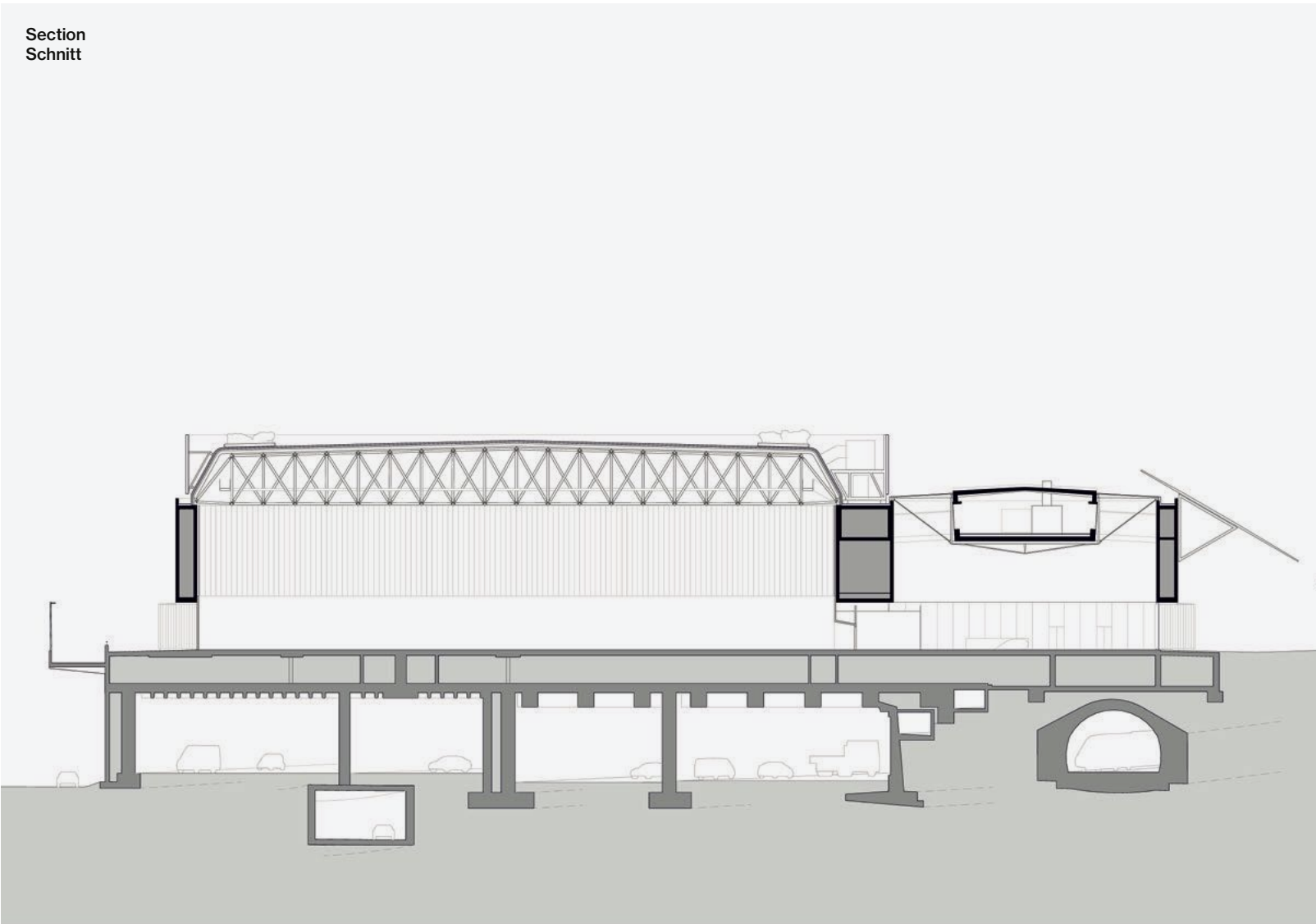
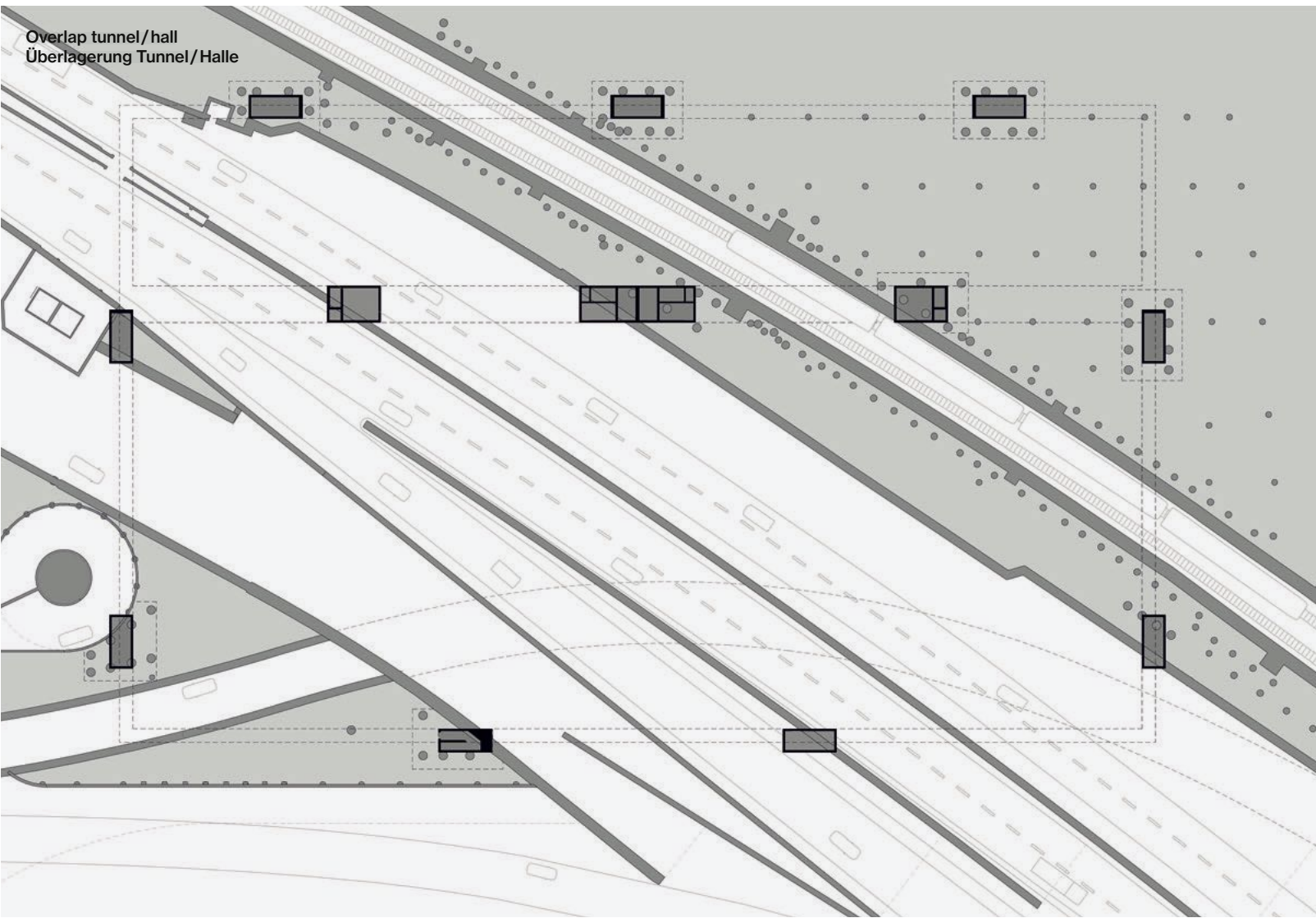
Al crocevia tra architettura e ingegneria

Malgrado la diversità delle opere qui riunite, vi sono almeno due punti che vorremmo ribadire in forma di conclusione. Il primo è che le sfide del tempo presente, per quanto inedite e complesse, possono trovare risposta attraverso lo studio e la reinterpretazione del passato. Anche l'architettura è una disciplina cumulativa e la conoscenza della storia, intesa nella sua accezione più vasta, che include dunque la storia delle pratiche costruttive, della concezione strutturale, della produzione e lavorazione dei materiali, è alimento per una riflessione volta a mettere in discussione pratiche consuete, muovendo dal modo stesso con cui consideriamo le questioni e i problemi che siamo chiamati a risolvere. La questione è quale tipo di sguardo rivolgiamo a questo patrimonio di esperienze: non tanto (o soltanto) quello dell'erudito o di chi vuole «prendere le misure di un'evoluzione», bensì di chi intende alimentare la propria immaginazione concependo «il proprio mestiere in termini di ipotesi, di problemi da risolvere, di possibili invenzioni».⁶

È in questo aspetto che risiede una forma di originalità fertile e profonda, quanto troppo spesso sottovalutata a scapito della mera invenzione di forme e di spazi: saper porre le questioni con spirito critico, senza accontentarsi di attitudini e pratiche consolidate per cercare, invece, con pazienza e tenacia, la soluzione più appropriata a un determinato problema. In questo, le opere presentate manifestano un'attitudine comune, pur al variare della loro destinazione funzionale, dimensione o impegno economico: un'attitudine che non è soltanto qualificata dalla ricerca della precisione concettuale, strutturale e costruttiva ma che partecipa, al tempo stesso, della mentalità dell'architetto e dell'ingegnere (per il quale «nella maggior parte dei casi, inventare è adattare delle conoscenze o un'esperienza già acquisita: concepire delle nuove combinazioni a partire da elementi strutturali o da materiali già familiari; sostituire un materiale o un tipo di materiale o un tipo di struttura con un altro: adattare»);⁷ giungendo così a riconoscere, con orgogliosa modestia, che un impeccabile risanamento di una facciata può sforgare intelligenza più di mille gesticolazioni formali.

1: G. Conca è l'autore dei paragrafi 2 e 3, N. Navone dei paragrafi 1, 4 e 5. L'introduzione e le conclusioni sono scritte a quattro mani.
2: M. Guetg, *Das Ingenieurwesen steckt in einer Sackgasse. Gespräch mit Jürg Conzett*, www.heimatschutz.ch/interview (20 aprile 2025).
3: Desideriamo ringraziare Roberto Guidotti per questi chiarimenti.
4: Per il quale si rinvia a P. Amaldi, «Livio Vacchini, les multiples chemins de la forme», in *matières*, 2020, p.182–197.
5: Sul concetto di «spazio soglia» si rinvia, tra la numerosa bibliografia

recente, a M. Bassanelli, «Lo spazio soglia come nuovo luogo della domesticità», in *BDC*, n.2, 2015, p.315–326 e N. Arzoumanian, D. Bengoa, *Habiter l'entre-deux*, Parenthèses, Marseille, 2024.
6: B. Reichlin, *Jürg Conzett e i suoi architetti*, in G. Beltrami, L. Tedeschi (a cura di), *Jürg Conzett. Un ponte contemporaneo*, catalogo della mostra (Palazzo Barbaran da Porto, 11 luglio–3 novembre 2002), Museo Palladio, Vicenza, 2002, p.3–5.
7: «Invention», in A. Picon, *L'art de l'ingénieur: constructeur, entrepreneur, inventeur*, Paris, 1997.



The new hall sits above the car and train tubes of the Rosenberg Tunnel. Twelve hollow cores support the load of the continuous concrete box girder. They were cast in individual segments. Die neue Halle liegt über den Auto- und Eisenbahnrohren des Rosenbergtunnels. Zwölf Hohlkörper tragen die Last des umlaufenden Betonhohlkastens ab. Sie wurden in einzelnen Segmenten betoniert.

- 1: M. Guetg, *Das Ingenieurwesen steckte in einer Sackgasse*, Conversation with Jürg Konzett, www.heimatschutz.ch/interview (accessed 20 April 2025).
- 2: We would like to thank Roberto Guidotti for these clarifications.
- 3: On this, see P. Amaldi, "Livio Vacchini, les multiples chemins de la forme," in *matières*, 2020, p. 182–197.
- 4: On the concept of the "threshold space" see, among the voluminous recent bibliography, M. Bassanelli, "Lo spazio soglia come nuovo luogo della domesticità," in *BDC 2* (2015): 315–326, and N. Arzumanyan and D. Bengoa, *Habiter l'entre-deux*, Marseille 2024.
- 5: B. Reichlin, "Jürg Konzett e i suoi architetti," in G. Beltrami and L. Tedeschi (eds.), *Jürg Konzett: Un ponte contemporaneo*, exhibition catalog (Barbaran da Porto Palace, 11 July–3 November 2002), Palladium Museum, Vicenza 2002, p. 3–5.