

lab
ingénierie

Energy

Material

Environment

Lab-ingénierie is a design office specialised in environmental and low carbon engineering which assists architects, engineers, project owners and builders in the design and construction of energy-efficient buildings that are comfortable and have a low impact in terms of resources and carbon.

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Philosophy

Whatever we design and build, we will inevitably consume material and energy resources. How can we limit this impact, given our dwindling resources which also release greenhouse gases when they are used?

We offer multifaceted, complementary solutions, focusing on the following themes: Energy, Materials, Comfort, Water, Biodiversity and Resources.

Simple but self-evident solutions are our watchword. We prefer bioclimatism to energy systems, low-tech rather than the technology race, renovation rather than demolition/rebuilding, and sharing assets and their usages.

We see this challenge as a unique opportunity to unite around a common cause, to rethink the way we build and at the same time, our contribution to society.



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Graduate HVAC and
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Manager



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Digital Simulations and
Energy Audits Manager



Thibaut Vergé

Administration and Financial
Manager



Marie Moroté

Communication Manager

Environmental and Low Carbon Engineering

We assist project management teams in the environmental design of their projects based on understanding the architectural issues and our scientific and technical knowledge, tested by initial rough calculations and validated by digital simulations.

Environmental Strategy

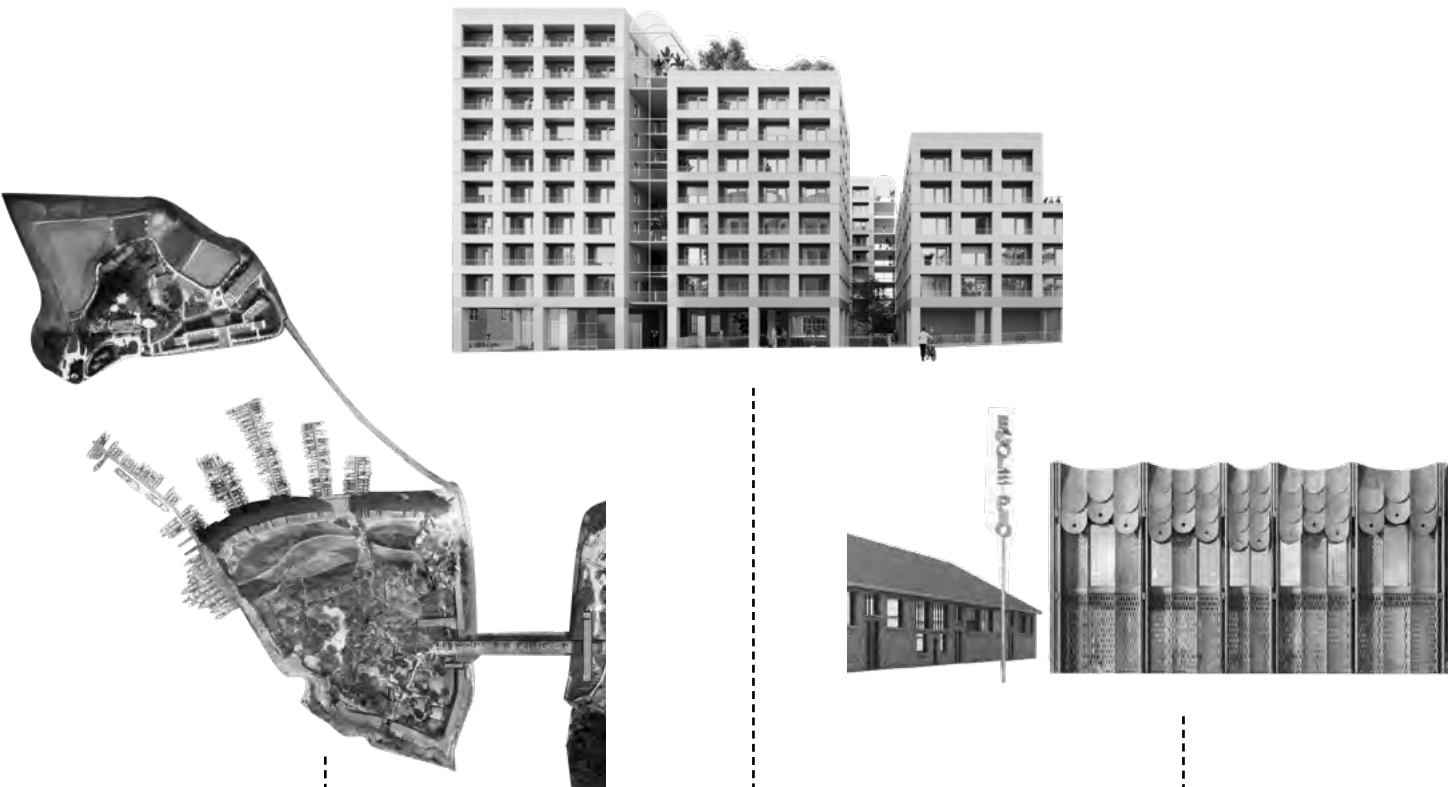
Understand the local climate, the occupants' needs in terms of comfort and the architectural choices to limit the consumption of energy and resources.

Low Carbon Strategy

Limit the building's carbon footprint by proposing low-impact materials, sharing assets and limiting waste.

Life Cycle Analysis

Account for the carbon footprint of a building under construction / in operation / undergoing deconstruction, and propose solutions to limit its impact.



Zhoushan Phoenix Island

Client: private client
Architect: Ateliers Jean Nouvel
Programme: Residential units / Shops / Activities
Site: Zhoushan, China
Surface area: 150,000 m²

Petit - Saint Vincent de Paul

Client: RIVP
Architect: Kuehn Malvezzi, Nicolas Dorval-Bory and Plan Común
Programme: Accommodation
Site: Paris
Surface area: 13,000 m²

PIO

Client: Town of Versailles
Architect: AAVP
Programme: Nursery School
Site: Versailles
Surface area: 1,500 m²

Environmental Strategy

Low Carbon Strategy

Life Cycle Analysis

Energy Optimisation

Thermal Comfort and

We readjust the thermal comfort of spaces and limit the energy consumption of buildings when necessary by analysing the building, its technical characteristics and its usages to propose adapted technical solutions.

Energy Audit

Study the building envelope and usage, estimate its energy consumption and analyse the energy costs to propose concrete solutions limiting the cost in kilowatt-hours and euros.

Comfort Audit

Observe situations of overheating in summer and coldness in winter, analyse the building and technical systems to effectively address this discomfort.

Digital Simulation

Validate the architectural and technical design by dynamic digital simulation, calculation of daylight autonomy and aeraulic comfort.

Technicentre SNCF Chambéry

Client: SNCF
Programme: Technical centre / Offices
Site: Chambéry
Surface area: 100,000 m²
Task: Energy Audit



Nuage

Client: Compagnie de Phalsbourg
Architect: X-TU
Programme: Accommodation
Site: Paris
Surface area: 9,000 m²
Task: Comfort audit

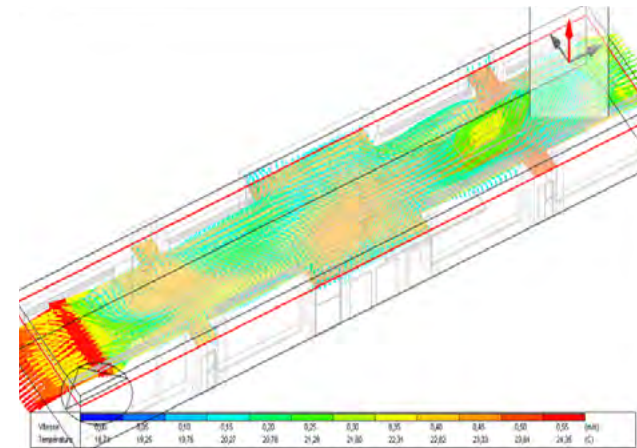


Digital Simulation

Natural Ventilation

CREM

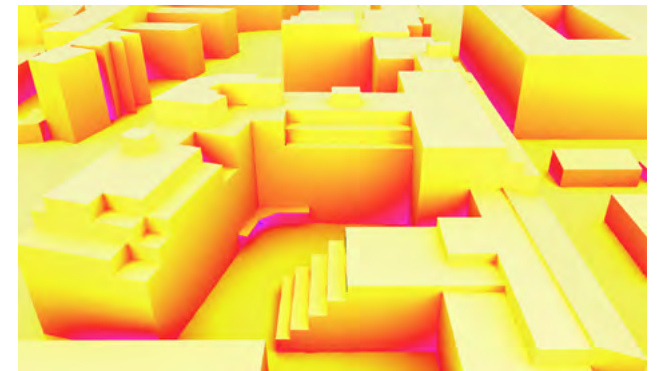
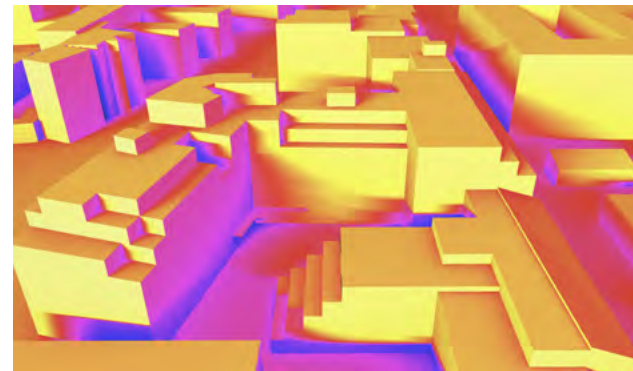
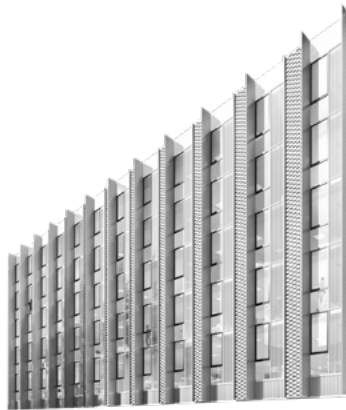
Client: Funecap
Architect: AAVP
Programme: Crematorium
Site: Paris
Surface area: 6,000 m²
Task: Environmental and Low Carbon Strategy



Sunlight

Ardennes

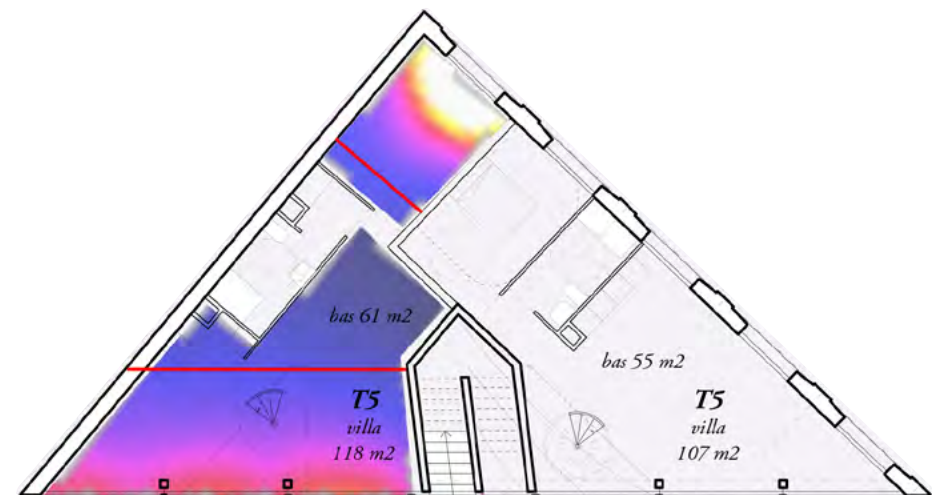
Client: HSBC
Architect: SHA
Programme: Offices
Site: Paris
Surface area: 10,000 m²
Task: Environmental Strategy



Daylight Autonomy

Crimée

Client: Immobil
Architect: & Givry, Armand Nouvet
Programme:
Site: Paris
Surface area: 4,600 m²
Task: Global environmental approach, certification under the French standard for housing NF Habitat HQE, at an excellent level, compliance with the climate plan, by achieving level E3C1



Digital Simulation

Environmental Certification

To validate the energy and environmental strategy implemented and enhance the value of the real estate, we offer project owners the possibility to certify their buildings.

Urban Planning

HQE for Urban Planning

Building

HQE for Sustainable Buildings / NF Habitat HQE / BREEAM / LEED / E+C-

Well-being

Osmoz / WELL

Energy

Effinergie +/- BBC (low energy building) / BEPOS (positive energy building) / Passivhaus

Material

BBCA (low carbon building) / Biosourced



Galia

Client: GALIA
Architect: PCA-Stream
Philippe Chiambaretta
Site: Paris
Surface area: 8,800 m²
Programme: Hotel, spa and offices
Task: Environmental approach, HQE Renovation certification, OsmoZ certification

Offices

Petraea

Client: Woodeum
Architect: Wilmotte & Associés
Site: Reuil
Surface area: 11,460 m²
Programme: Accommodation
Task: NF Habitat HQE and BBCA certification

Accommodation

Villerupt

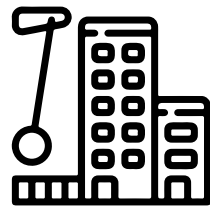
Client: DUVAL Group
Architect: ZUO
Site: Villerupt
Surface area: 10,000 m²
Programme: Shops, Supermarket, Health Centre
Task: Environmental and Low Carbon engineering, BREEAM certification

Shops



We offer a new perspective on the construction and deconstruction process through our involvement in waste minimisation and the sensible use of resources.

We assist Project Owners and Project Managers in the recovery of materials from existing buildings by the reuse and the integration of reusable materials in new or renovated buildings.



CLEANING / DEMOLITION OPERATIONS: Assistance with selective deconstruction!

1. RESOURCE INVENTORY

Identification of the reuse potential: quantification, qualification, evaluation of the reuse effort.

2. MASTER PLAN

Proposal of reuse deployment: conservation, donation, sale.

3. TECHNICAL SUPPORT

Production of meticulous removal, packaging and storage methodologies, drafting of selective removal special technical specifications.

4. ORGANISATION OF COLLABORATIVE REMOVAL DAYS

Administrative, insurance and technical management to allow the removal of elements by craftspeople and associations for the purpose of donation.

5. CONSTRUCTION SITE SUPERVISION

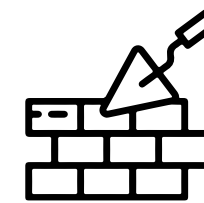
Participation in construction site meetings, supervision of removal, packaging and storage, stock updating when the materials are made available to the recipients.

6. SOCIAL AND ENVIRONMENTAL REVIEW

Monitoring of the environmental benefits: waste avoided, grey energy saved, carbon not emitted.

Reuse of Construction Materials

Involved in waste minimisation and the sensible use of natural and energy resources, Lab ingénierie and Mobius Réemploi offers a fresh perspective on the (de)construction process.



NEW-BUILD OR RENOVATION: integrate reusable materials into your projects!

1. FEASIBILITY STUDY

Definition of materials compatible with the architectural / technical project and the reuse goals.

2. SOURCING

Search for materials in operations in-situ or ex-situ.

3. NORMATIVE VALIDATION

Monitoring of the technical inspection of the reusable materials to be integrated into the operation.

4. INSURANCE VALIDATION

Management of the insurability of reusable materials: product, biennial and decennial warranty.

5. CONSTRUCTION SITE SUPERVISION

Participation in construction site meetings, monitoring of procurement and implementation of reusable materials.

6. SOCIAL AND ENVIRONMENTAL REVIEW

Monitoring of the environmental benefits: waste avoided, grey energy saved, carbon not emitted.

References

Offices

Accommodation

Education

Equipment

Offices

Bercy



Client: NEXITY
Architect: Nadaud Lavergne
Site: Charenton
Surface area: 350,000 m²
Task: Environmental and Low Carbon Engineering

Nord Pont



Client: COVEA Immobilier
Architect: Quatorze IG
Site: Paris
Surface area: 12,000 m²
Task: Environmental engineering, BREEAM In- Use and BREEAM RFO certification

Jardin de L'Arche Tower



Client: SOGEPROM
Architect: Atelier 2/3/4
Site: La Défense
Surface area: 65,000 m²
Task: Dynamic Thermal Simulation

76 Prony



Client: COVEA
Architect: Studios Architecture
Site: Paris
Surface area: 8,300 m²
Task: BREEAM certification and commissioning

54 Londres



Client: ALIUTA
Architect: Axel Schoenert
Site: Paris
Surface area: 5,500 m²
Task: HQE certification and commissioning

Ardennes



Client: HSBC
Architect: SHA
Site: Paris
Surface area: 20,000 m²
Task: Environmental and Low Carbon

Coulanges



Client: Beacon Capital Partners
Architect: Sahuc et Katchoura
Site: Paris
Surface area: 3,000 m²
Task: Environmental and Low Carbon Engineering, HQE, BBC Effinergie Rénovation certification

Campus Automobile



Client: AFORPA
Architect: Atelier d'Architecture 2+1
Site: Guyancourt
Surface area: 15,000 m²
Task: Environmental and Low Carbon engineering, energy audit

Villerupt



Client: Duval Group
Architect: ZUO
Site: Villerupt
Surface area: 10,500 m²
Task: Environmental and Low Carbon engineering, BREEAM certification

40 rue Legendre



Client: Galia Group
Architect: PCA
Site: Paris
Surface area: 8,000 m²
Task: HQE for tertiary-sector buildings certification and Osmoz certification

Perial Guersant Head Office



Client: PERIAL Group
Architect: ORY & ASSOCIES
Site: Paris
Surface area: 7,000 m²
Task: Energy and Comfort

LEM



Client: Terrot Group
Architect: AAVP
Site: Paris
Surface area: 1,600 m²
Task: BREEAM certification

Villiers



Client: AEW Ciloger
Architect: Sébastien Héry Architecte
Site: Paris
Surface area: 2,180 m²
Task: Environmental engineering, supervision of compliance with the French tertiary sector decree and BREEAM certification

Talent Makers lab



Client: Compagnie de Phalsbourg
Architect: AAVP
Programme: Training centre / Offices / Shops / Concert hall / Residential units
Site: Genevilliers
Surface area: 30,000 m²
Task: Environmental and Low Carbon Strategy

Mix-Cité



Client: DCB Promotion
Architect: Richez et Associés
Programme: Residential units / Shops / Offices
Site: Lyon
Surface area: 21,500 m²
Task: Environmental Strategy

Novaxia Head Office



Client: NOVAXIA
Architect: Archi Consult
Programme: Offices
Site: Paris
Surface area: 1,500 m²
Task: Environmental and Low Carbon Strategy

Reinventing Paris Les Gobelins



Client: SOGARIS - Compagnie de Phalsbourg - NOVAXIA
Architect: BIG - DWD
Programme: Logistics centre / Offices / Shops Restaurants
Site: Paris
Surface area: 55,000 m²
Task: Environmental and Low Carbon Strategy

Accommodation

@home



Client: Xavier Niel
Architect: Wilmotte & Associés Architectes
Site: Ivry-sur-Seine
Surface area: 12,000 m²
Task: H&E approach
 Dynamic Thermal Simulations

Gentilly



Client: Icade
Architect: SEURA
Site: Gentilly
Surface area: 8,000 m²
Task: Environmental and Low Carbon Engineering

Solen



Client: SOLEN
Architect: Randja Architectes
Site: Paris
Surface area: 8,000 m²
Task: Daylight study

Campusea



Client: Icade
Architect: RRC Architectes
Site: Ivry-sur-Seine
Surface area: 9,200 m²
Task: NF Habitat HQE certification

Zhoushan



Client: Private client
Architect: Atelier Jean Nouvel
Programme: Residential units / Shops / Activities
Site: Zhoushan, China
Surface area: 150,000 m²
Task: Environmental and Low Carbon Strategy

EDF Low-Carbon



Client: EDF
Architect: AAVP
Programme: Residential units / Shops / Activities
Site: Bordeaux
Surface area: 25,000 m²
Task: Low Carbon Strategy

Petit Saint Vincent de Paul



Client: RIVP
Architect: Kuehn Malvezzi, Nicolas Dorval-Bory and Plan Común
Programme: Accommodation
Site: Paris
Surface area: 13,000 m²
Task: Environmental and Low Carbon Strategy

Europacity



Client: Ceetrus
Architect: AAVP
Programme: Hotel / Conference centre
Site: Triangle de Gonesse
Surface area: 50,000 m²
Task: How to get your client to understand that if you want to build this thing, you will have to deconstruct somewhere else

Petraea



Client: Woodeum
Architect: Wilmotte & Associés
Site: Rueil-Malmaison
Surface area: 11,500 m²
Task: NF Habitat HQE and BBCA certification

Nuage



Client: Compagnie de Phalsbourg
Architects: XTU
Site: Paris
Surface area: 4,000 m²
Task: Comfort audit

Silva Tower



Client: KAUFMAN & BROAD
Architects: ART & BUILD, Studio Bellecour
Site: Bordeaux
Surface area: 9,000 m²
Task: Life Cycle Analysis

Hoya



Client: Woodeum
Architect: S2T
Site: Issy-les-Moulineaux
Surface area: 2,300 m²
Task: BBCA certification

Education

4 lower secondary schools in Le Mans



Client: Sarthe department
Architect: LPS/Fonteneau/Linéa - ACAU/ Rousseau - A propos
Surface area: 22,000 m²
Task: Environmental and Low Carbon Engineering, HQE and RT2012-20%

3 lower secondary schools in Seine-Saint-Denis department



Client: Seine Saint Denis department
Architect: Lehoux Philly Samaha, Ameller et Dubois
Site: Noisy sur Marne
Surface area: 15,000 m²
Task: Environmental and Low Carbon Engineering, HQE and RT2012-20%

PIO



Client: Town of Versailles
Architect: AAVP
Site: ZAC PION Versailles
Surface area: 1,658 m²
Task: Environmental and Low Carbon Engineering, E+C- label, level E3C2

Primary School in Villepinte



Client: Seine Saint Denis department
Architect: OGER International
Site: Villepinte
Surface area: 4,000 m²
Task: Environmental and Low Carbon Engineering, HQE approach, RT2012-20% and energy performance commitment

Equipment

SNCF Moulin Neuf



Client: SNCF
Architect: OGER International
Site: Chambly
Surface area: 100,000 m²
Task: Energy Audit

Crematorium



Client: FUNECAP
Architect: AAVP
Site: Paris
Surface area: 5,626 m²
Task: Environmental and Low Carbon Engineering, HQE approach, E+C- approach, level E4C1

SNCF Chambéry



Client: SNCF
Architect: OGER International
Site: Chambéry
Surface area: 100,000 m²
Task: Energy Audit

Villejuif Handisport Hall



Client: Town of Villejuif
Architect: Lehoux Philly Samaha agency
Site: Villejuif
Surface area: 2,780 m²
Task: Environmental Engineering, E+C- label, level E3

[IN]-CLOSURE



Client: Grousemont Foundation /
Nextfifty SC /AIA Seattle
Architect: ABF-lab
Programme: Public Space
Site: Seattle, USA
Surface area: 35,000 m²
Task: Environmental Strategy

Technical Resources

Equipment

- . 80 m² room – Meeting room;
- . 2 computers for calculation;
- . 8 laptop computers;
- . 1 A4 – A3 printer / scanner
- . 1 laser telemeter;
- . 1 infrared thermometer;
- . 1 hygrometer;
- . 1 lux meter.

Design & drawing

- . Autocad: 2D design;
- . Rhinoceros: 3D design;
- . Sketchup Make: 3D design for the upstream phase;
- . Grasshopper: parametric design;
- . Revit: BIM design.

Energy and air conditioning optimisation

- . Météonorm: Database containing global climate statistics and forecasts;
- . IES Virtual Environment: dynamic thermal calculation software;
- . Design Builder: dynamic thermal calculation software;
- . ArchiWizard: daylight calculation software;
- . Flovent V10: computational fluid dynamics software used to predict heat transfer and air flow;
- . Clima-lab: proprietary climate analysis software;
- . Energy-lab: proprietary energy optimisation software;
- . Ecotect: sunlight hours analysis software;

Comfort simulations

- . Flovent V10: computational fluid dynamics software used to predict heat transfer and air flow;
- . Dialux: natural lighting and brightness effect calculation software;
- . IES Virtual Environment: hygro-thermal comfort of indoor spaces.

Representation & DTP

- . Photoshop;
- . Illustrator;
- . Indesign;
- . Office 365.



Contact

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