

# RAINSCREEN CLADDING SYSTEMS



**DESIGNED FOR ARCHITECTS. BUILT FOR INSTALLERS**

## OUR APPROACH TO FACADES

### QUALITY. EXCELLENCE. SAVINGS

the facade industry is evolving and so are we. we have retained the strong elements of our original proposition - quality and service (technical, administration, logistics) - and we have enhanced our offer with new improved products and systems.

#### RAINSCREEN CLADDING SYSTEMS

we develop systems for the ever changing face of façade design.

we listen. we develop products which cope with your demands for more flexible and economical cladding solutions.

new build, renovation, steel, concrete, timber SIPs substructure, to any height.

advanced vertical and horizontal support systems. utilizing mechanical fix and structural adhesive techniques. for visible and concealed construction.

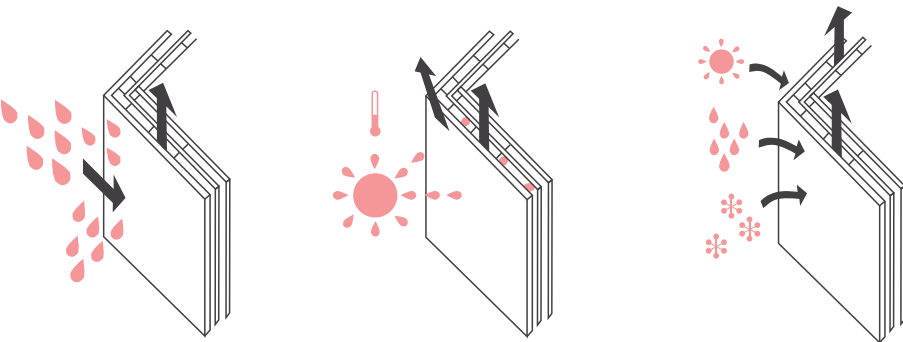
maintaining quality, offering technical excellence.

we believe cladding is a serious business. we offer a full support service. identifying potential cost savings. providing you with project specific static calculations, thermal values, setting out information and budget rates.

made in the UK.

#### DESIGN MATTERS

- static calculations
- thermal values
- specification writing assistance – NBS + specification clauses
- autoCAD
- layout advice
- method statements
- BBA certified



## OUR PEDIGREE

### A BIT ABOUT US

#### PROVIDING CLADDING SYSTEMS THAT ARE SAFE, ECONOMIC AND EFFECTIVE

we ensure that our rainscreen support solutions make the life of the architect and the installer easier and more time effective.

we have been involved in rainscreen systems for over ten years (some NVELOPE team members have been in the industry for over twenty years).

we are focused on staying ahead of the curve and invest in anticipating 'what next?'.

we listen to our architectural and installer customers.

alive. modern. fresh. confident. experienced.

we are a pragmatic business that provides industry solutions that work.

we get the job done.

simple to commission, simple to install and simple to manage.

we are a serious, modern business with a true sense of professionalism.

we make the best systems for façades – full stop.



[www.nvelope.com](http://www.nvelope.com)



[www.nvelope.com/ourpedigree](http://www.nvelope.com/ourpedigree)

## FOR ARCHITECTS

**OUR UNDERSTANDING. OUR VALUE. OUR OPINIONS.  
ALL WITH YOU - THE ARCHITECT - IN MIND**

### QUALITY. SAFETY. ECONOMY. CHOICE.

we understand and empathise with the modern architect.

our technical department is always here to help.

your quality guarantee – our products carry british board of agreement (BBA) certification.

easy to specify – our systems are available as NBS plus specification clauses and with autoCAD files.

optimised system and rail layouts with specialist, engineered solutions.

project vision and transparency provided through our support service (static calculations, thermal values and m2 budget pricing) - see 'project checklist'.

we are versed in supporting most key façade manufacturers' materials.

we always aim to hold extensive stocks of our brackets, rails and accessories – which means stock allocation is always available to get a project underway.



**AUTOCAD**

**nbsPlus**



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### ALUMINIUM.

NVELOPE brackets (and profiles) are manufactured in the UK to EN7559 production and EN12020-2 alloy and quality standards.

**weight** – aluminium density is 2.7kg/m<sup>3</sup>, or approximately one third that of steel. the low weight and high strength, malleability, simplicity of fabrication, corrosion resistance and good ability to conduct heat and electricity are some of the most important characteristics of aluminium.

**recyclability** – aluminium is very easy to recycle, needing only 5% of the energy required for primary production.

**strength** – aluminium alloys have tensile strengths of between 70 and 700n/mm<sup>2</sup>. in contrast to most steel alloys, at low temperatures the strength of aluminium increases, without any embrittlement of the metal. at high temperatures the strength decreases. at constant temperatures over 100°C consideration must be given to the effect on the structural strength of the material

**non-toxic** – aluminium is nature's most common metal with no less than 8% of the earth's crust consisting of many different forms of aluminium compounds, which also naturally occur in our food.

**corrosion** – as with most other metals, aluminium reacts with the oxygen in the air. the oxide layer, which is created on the surface of the material, is very thin and provides a natural high level of corrosion protection. if this oxide layer is damaged it spontaneously reforms itself.

all of our brackets are produced from sustainable aluminium and are fully traceable.

## FOR INSTALLERS

**OUR GUIDES AND SERVICE TO MAKE INSTALLATION CLEAR,  
SUCCINCT AND EFFICIENT**

### SERVICE. FAST. EXPERIENCE. PRICE

we understand and empathise with the modern installer of cladding systems and the building envelope.

knowledge acquired from our years of service has enabled us to established a full support programme specifically for installers of our products.

our support staff are always available and able to assist with current stock availability, price and technical information.

'buildable' installer friendly systems – designed by installers for installers and architects – are functional and designed to facilitate fast track construction.

we are experienced in supporting most key façade manufacturers' cladding materials.

ex-stock - we always aim to hold extensive stocks of our brackets, rails and accessories – which means stock allocation is always available to get a project underway at short notice.

we offer a prompt, efficient delivery service. our product is always accurately picked and packed. each delivery is clearly identified to aid the process.

our technical service package includes static analysis, installation advice and installer team training. optimised systems and rail layouts.

our commercial service package includes m2 budget pricing and estimates, bespoke product solutions through specialist high quality extruding and cutting services.

our experience allows us to 'flag' potential issues early and before a scheme goes onto site.



[www.nvelope.com/forinstallers](http://www.nvelope.com/forinstallers)

### LOOKING FOR A SYSTEMS INSTALLER?

we work with the best. if you need assistance in selecting and/or making contact with an installer talk to us – we can advise based on location, size and scope of scheme.

### INSTALLATION TRAINING

we offer full training for the installation team of all NVELOPE systems.



# NVELOPE PROJECT CHECKLIST

## EACH FACADE IS DIFFERENT



the requirements for each façade are always different and depend on factors such as local wind loads, height of the façade, substrate being fixed to, selected facing material and the cladding zone. all NVELOPE systems can be engineered to project specific requirements.

unlock your scheme by completing and submitting the NVELOPE project checklist (ideally accompanied with elevation and plan autoCAD drawings, indicating your proposed cladding requirements).

this will allow us to prepare a project specific cladding solution that includes static calculations and setting out information and thermal calculations for the support system.

please don't hesitate to contact our technical department for specific advice.



[www.nvelope.com/projectchecklist](http://www.nvelope.com/projectchecklist)

### BRIDGING THE THERMAL GAP

the 2010 revision to part L places specific emphasis on the performance of the building details and the additional losses through linear thermal bridging.

thermal bridges cause increased flow of heat and should be taken into consideration when designing a façade/façade system. since the fixing of ventilated cladding must go through the thermal insulation into the substrate it cannot be avoided.

thermal decoupling of the substructure from the ventilated façade is achieved through thermal separation layers.

NVELOPE brackets are pre-assembled with thermal isolators – isolators help reduce thermal bridging – in addition NVELOPE isolators prevent a chemical reaction occurring between an aluminium bracket and lime in a concrete frame.

the thermal value of NVELOPE brackets/isolators have been calculated.

the additional heat loss for each m2 of a detail is known as the PSI value and this additional heat loss is dependant upon the type of detail, the thermal conductivity of the cladding materials and the quality of the detail design and installation.

### NVELOPE ISOLATORS

- featured as standard on all NVELOPE brackets
- pre-fixed isolators mean NVELOPE brackets are quick to assemble
- low thermal conductivity/passive house application
- flame retardant polypropylene copolymer
- fully recyclable and ecologically friendly

### INDICATIVE M2 PRICING

resultant setting-out information allows for guide m2 price rates to be determined.

### STATIC CALCULATIONS

a static calculation assesses dynamic forces e.g. wind load and dead loads (weight of the cladding) under project circumstances. in engineering, static systems do not move or change state – therefore a static calculation ensures that under a given set of circumstances the system (mix of brackets and components) will not move and will support the load it is intended to support.



[www.nvelope.com/projectchecklist](http://www.nvelope.com/projectchecklist)





PRODUCT RANGE

DETAIL OF OUR SYSTEMS

BBA APPROVAL AND ISO 9001

OUR CLADDING SUPPORT SYSTEMS

structurally developed from high specification alloys – suitable for supporting even the most demanding façade materials.

- HPL (high pressure laminate)
  - timber weatherboard
  - terracotta
  - brick slip
  - fibre cement
  - fibre concrete
  - metals
- ACM
  - render
  - ceramic
  - thin stone
  - glass
  - photovoltaic

you name it - we make it happen.

we hold extensive stocks of our standard façade support systems including brackets, components, extrusions and accessories in all configurations. in-stock items are available to order for immediate delivery. project specific, cut profile lengths and bespoke systems solutions are available. we turn things around super-fast.



[www.nvelope.com/productrange](http://www.nvelope.com/productrange)

DESIGN

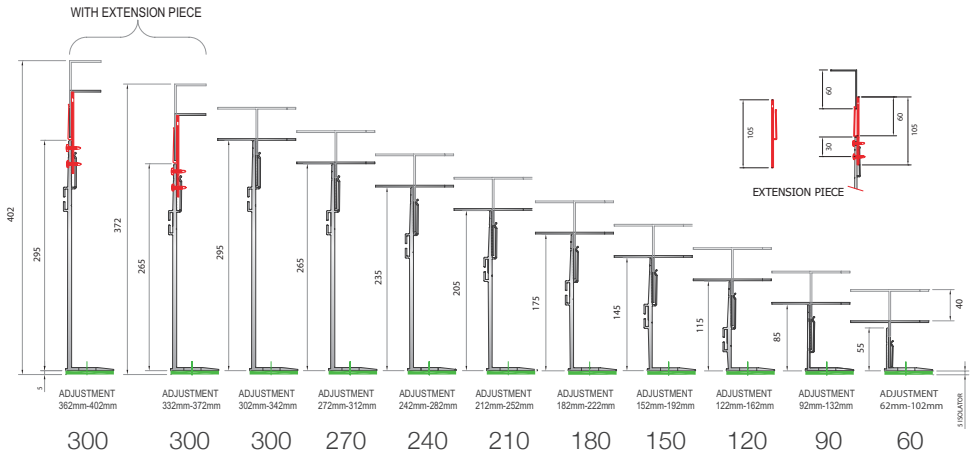
we ensure that our rainscreen brackets and grid systems are safe and optimised with our design support service. we add to the design process with an almost infinite range of façade appearance and layout options.

TRIED AND TESTED

NVELOPE support systems have british board of agreement (BBA) certification and are manufactured to ISO 9001 quality management standards.

we simplify the complexity of façades. our system supports almost any type of façade.

concealed fix (mechanical and structural bonding) and visible fix solutions are available. the systems selector will assist in matching the NVELOPE system to the chosen façade materials for your scheme.



GENERIC - CLADDING TYPES	NV1	NV2	NV3	NV4 (ts200)	NV5 (ts300)	NV6	NV7
ACM	OK	OK					OK
ALUMINIUM	OK	OK					OK
BRICK SLIP							
CERAMIC		OK	OK				
COPPER		OK				OK	
FIBRE CEMENT	OK	OK	OK				
FIBRE CONCRETE	OK	OK	OK				
GRC	OK	OK	OK				
GRP	OK	OK	OK				
GLASS		OK					
HPL - HIGH PRESSURE LAMINATE	OK	OK	OK	TRESPA	TRESPA		
PHOTOVOLTAIC							
RENDER	OK					OK	
STAINLESS STEEL	OK	OK				OK	
TERRACOTA							
TIMBER						OK	
TIMBER LAMINATE	OK	OK					
THIN STONE		OK	OK				
WEATHER BOARDING						OK	
ZINC						OK	OK

- NV1** NVELOPE vertical back frame/bracket + ‘T’ and ‘L’ & face fix (rivet) applications
- NV2** NVELOPE back frame/bracket + ‘T’ and ‘L’ – structural bond (SikaTack) – concealed fix
- NV3** NVELOPE back frame/bracket + ‘T’ and ‘L’ + horizontal rail & cleats – concealed fix/mechanical
- NV4** NVELOPE back frame/bracket + ‘T’ and ‘L’ + horizontal Trespa branded (ts200) rail & cleats – concealed fix (HPL)
- NV5** NVELOPE back frame/bracket + ‘T’ and ‘L’ + horizontal Trespa branded (ts300) rail & cleats – concealed fix (HPL)
- NV6** NVELOPE bracket and carrier – hybrid system (alu/timber) – timber cladding + ply carrier for metal
- NV7** NVELOPE back frame/bracket featuring ‘cassette’ ‘T’ - concealed fixed ‘cassette’



OUR CLADDING SUPPORT SYSTEMS



NV1

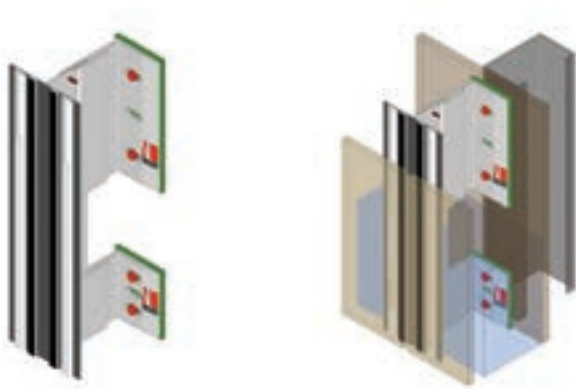
NV1 is the NVELOPE back frame – vertical cladding applications.

NV1 is the basis of all NVELOPE rainscreen systems – NV1 is suitable for face fixing/rivet fixing cladding – elements (e.g. fibre cement, high pressure laminate (HPL), ACM and metal rainscreen panels).



NV2

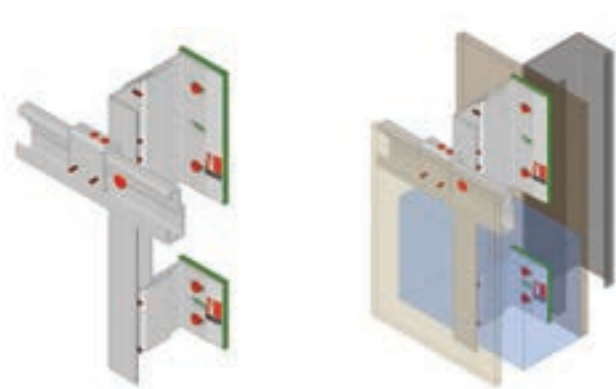
NV2 is the NVELOPE system for secret fix/structural bonding applications – vertical cladding applications – features SikaTack structural bonding system.



NV3

NV3 is the NVELOPE system for secret fix/mechanically fixed applications – vertical cladding applications.

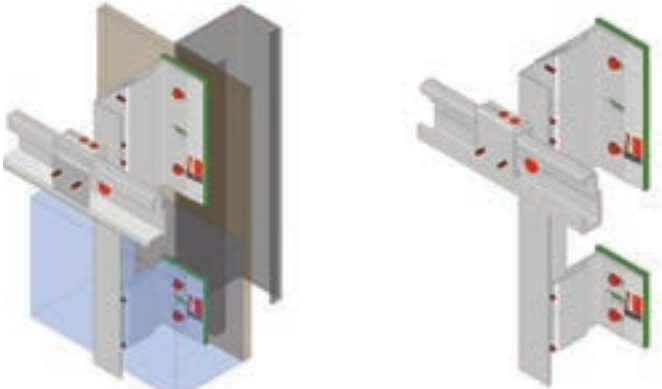
NV3 is suitable for secret fix cladding applications, mechanical elements, to fibre cement, high pressure laminate (HPL), ceramic, thin stone etc.



NV4 (ts200)

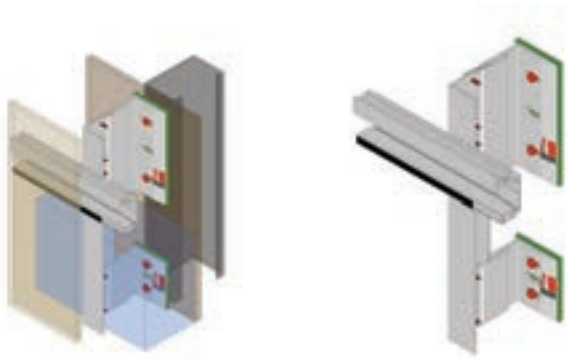
NV4 (ts200) is the NVELOPE system for secret fix/mechanically fixed applications – vertical cladding applications

NV4 (ts200) is suitable for secret fix cladding applications, mechanical elements, Trespa meteon HPL only.



**NV5** (ts300)

NV5 (ts300) is the NVELOPE system for secret fix applications, vertical cladding applications (trespa meteon HPL only).



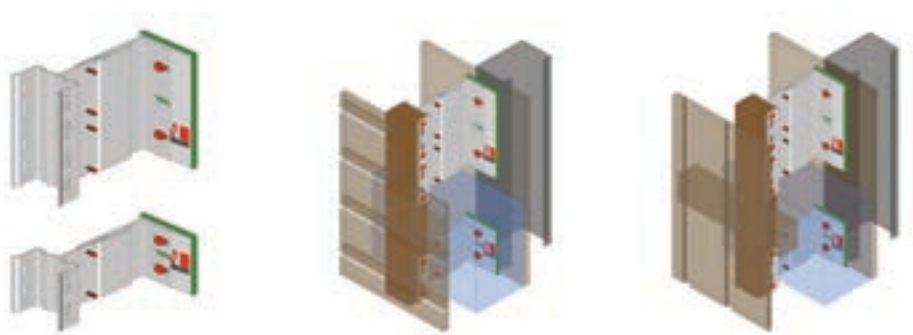
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**NV6**

NV6 is the NVELOPE system for supporting a timber batten, vertical cladding applications (to support vertical and/or horizontal cladding elements).

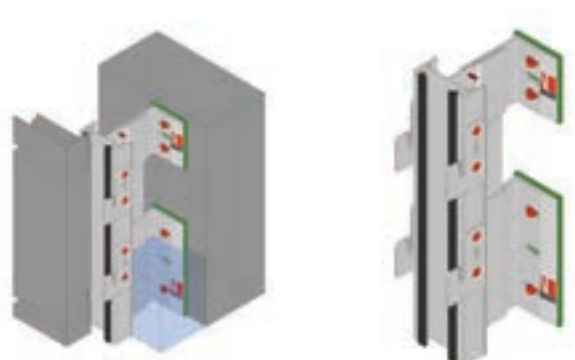
suitable for the support of vertical or horizontal timber rails or timber boarding, to which timber cladding, weatherboard panels or boards, or panels made to support other materials, e.g. copper, zinc, etc. may be attached.

the bracket assembly provides a suitable element for the fixing of timber bearers or battens where medium to large cladding zones are required.



**NV7**

NV3 is the NVELOPE system for secret fix 'cassette' (ACM/zinc/aluminium) – vertical cladding applications. secured using cassette hangers to provide a concealed fixing.



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## THE AESTHETIC

### UNIVERSITY OF EAST ANGLIA

#### 1. UNIVERSITY'S CHINESE LANTERN SHINES WITH NVELOPE

when designing a new student accommodation and learning centre for international students at the university of east anglia (UEA), LSI architects wanted to create a modern structure that would reflect the global character of its users. they created a gracefully curved structure based on a chinese lantern.

a combination of Trespa meteon HPL and cement based petrarch cladding panels were selected for their versatility and colour. to provide a seamless fix of the petrarch cladding, NVELOPE's NV2 (structural adhesive) rainscreen cladding system was specified.

this system comprises:

- SikaTack panel adhesive (activators, primer, tape, adhesive)
- NV2 cladding support system

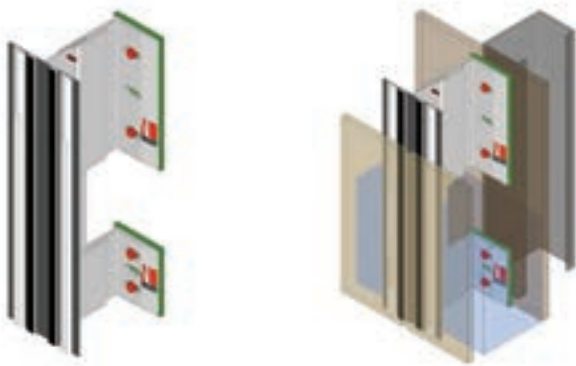
NVELOPE brackets in a size range from 90mm to 120mm were provided, allowing a cladding zone from 90mm to 160mm to be accommodated. the supports were easily fixed to the substrate of the structure using pre-drilled holes.

designed with sustainable principles in mind, the adhesive fix helps limit cold bridging to provide more effective energy saving temperature control to the structure. the NV2 cladding support system is also easily recycled, being aluminium, so can be reused at the end of its life for 5% of the energy required for its original production.

please visit [www.nvelope.com/theaesthetic](http://www.nvelope.com/theaesthetic)



project: university of east anglia  
location: norwich  
architect: LSI architects  
product: NV2 (structural adhesive) rainscreen cladding support system



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## THE AESTHETIC

### EXCEL EXHIBITION CENTRE

#### 2. NVELOPE EXCELS WITH INNOVATIVE CLADDING SUPPORT

the band, which runs around the new extension at ExCeL, features distinctive yellow vitreous enamel steel panels, to create a contrast against the grey cladding of the rest of the building.

to create the desired finish, grimshaw architects required a method of framing and fixing the enamel steel panel to the building. the finishing of the framing had to be flawless.

experts in the design and fabrication of cladding support systems, NVELOPE met the challenge and created a bespoke solution.

“we created large asymmetric ‘T’ shaped profiles which were invisibly secured to the main building structure onto which the yellow vitreous enamel steel panels were then hung. each aluminium section is aligned and linked to the next with stainless steel dowel pins, to allow thermal expansion and contraction movement of the profiles.”

we are extremely pleased with the finished result and it clearly demonstrates our ability to deliver unique cladding support details to high profile projects.

as well as bespoke solutions, we can offer a range of off-the-shelf cladding support systems. designed to be specifier and installer friendly like the company's core systems.

“with the continually changing geometry of the spiral edge profile, the success of NVELOPE in developing the support bracketry was in making it look so simple,” (ben heath, associate director at grimshaw architects).

please visit [www.nvelope.com/theaesthetic](http://www.nvelope.com/theaesthetic)



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project: ExCeL exhibition centre  
location: east london  
architect: grimshaw architects  
product: bespoke cladding support system by NVELOPE



## THE AESTHETIC

### THE CENTRE FOR ECOLOGY AND HYDROLOGY

#### 3. NVELOPE GETS 'A' STAR IN SCIENCE PROJECT

the centre for ecology and hydrology (CEH) is the UK's centre of excellence for land and freshwater science.

as part of a £50 million restructuring programme, NVELOPE's 'intelligent' cladding support system has been specified.

the new laboratory building aims to be sustainable and comply with the highest environmental standards and has received an excellent BRE (building research establishment) rating for its design and construction elements.

the building was clad in a renewable material, western red cedar which is naturally resistant to decay and insect attack, offers superior acoustic qualities and is an excellent material for thermal insulation. to hold the cladding firmly in place and create a robust shell, NV6 NVELOPE cladding support system was specified. the NVELOPE carriers enable the easy application of timber battens on to which the cladding can be fixed.

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**project:** the centre for ecology and hydrology (CEH)  
**location:** wallingford  
**architect:** RH partnership  
**product:** NV6 rainscreen cladding support system



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## THE AESTHETIC

### O-CENTRAL

#### 4. NVELOPE PROVIDES THE RIGHT SUPPORT

for a stunning new residential scheme in central london, o-central, architects required a reliable, durable and practical method of fixing the vast amounts of exterior cladding to the building.

designed by architects tate & hindle for oakmayne properties, the building required an innovative approach to the exterior cladding, which could be installed quickly as it was to be completed on a fast track 69-week programme.

tate & hindle specified white render and Trespa meteon rainscreen cladding panels. extremely weather resistant, they are not affected by sun, rain (including acid rain) or moisture. to provide a secure fix for the panels, NVELOPE provided its NV2 (structural adhesive) rainscreen cladding support system.

for o-central, with aesthetics of paramount importance, the panels were held onto the NV2 support system using SikaTack panel adhesive, a high performance adhesive system.

NVELOPE produces a comprehensive range of cladding support systems to suit most applications, including vertical fix, horizontal fix and secret fix. as part of a complete technical support package, NVELOPE provides specifiers with a range of tools and services.

please visit [www.nvelope.com/theaesthetic](http://www.nvelope.com/theaesthetic)



[www.nvelope.com/theaesthetic](http://www.nvelope.com/theaesthetic)



**project:** o-central  
**location:** elephant & castle, london  
**architect:** tate & hindle for oakmayne properties  
**product:** NV2 (structural adhesive) rainscreen cladding support system





**WE ARE HIGHLY EXPERIENCED AND UNDERSTAND THE REQUIREMENTS OF OUR CLIENTS. WE CONTINUALLY PUSH BOUNDARIES TO OFFER UNPARALLELED PRODUCT, SERVICE AND PRICE. WE DON'T STOP THERE THOUGH - WE ENHANCE OUR PROPOSITION WITH INITIATIVES AND SOLUTIONS THAT SAVE OUR CLIENTS TIME, EFFORT AND HASSLE. WE ARE A TOTAL CLADDING SUPPORT SYSTEM - WITH EMPATHY AND UNDERSTANDING OF OUR CLIENTS' NEEDS.**

NVELOPE would like to thank the following companies for their permission to use the pictures featured in this brochure:  
CDW ltd, kovara projects ltd, LSC ltd, NG developments ltd, vivalda ltd.



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