



# The Architect Effect

**BMI**

**Creating opportunities  
in an evolving industry**

[bmigroup.com](http://bmigroup.com)



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“The master builder of past times, the generalist-architect who had the competence and capacity to integrally design, construct and build an edifice, is nowadays threatened by extinction.”

Oya Atalay Franck, European Association for Architectural Education (EAAE)<sup>1</sup>

“With the rapid evolution of available technologies, and the integration of them into the profession, the role of an architect is changing faster than it ever has before.”

Brian Staton, Associate AIA, President and CEO<sup>2</sup>

Lead the charge for conscious change.

Be a positive impact on your industry.

Demonstrate the value you bring to construction.

This is what we call  
**The Architect Effect.**



1. European Association for Architectural Education, The Changing Roles of the Architect, <http://www.eaae.be/eaae-academies/education-academy/themes/changing-roles-architect/>, 2017.

2. Building Design and Construction, <https://www.bdcnetwork.com/blog/what-future-architecture-profession>, 2019.

# Executive summary

By talking to 1,850 architects from around the world, BMI has identified insights into the changing role of the architect in today's construction landscape.

## WHO ARE BMI?

BMI Group is the largest manufacturer of flat and pitched roofing and waterproofing solutions throughout Europe, with a significant presence in parts of Asia and Africa. We deliver innovative roofing and waterproofing systems, designed to transform the way people live and work. Providing protection, added value and peace of mind for architects, roofers, building owners and homeowners alike.

One key opportunity for architects to meet the problem-solving demands of modern buildings can be found in exploring roofing solutions.

Our research shines a light on the 79% of architects we heard from who are already using the roof to solve challenges around adaptability and sustainability and, as a result, increase their influence over their projects.

## WHY ARE WE TALKING ABOUT ROOFS?

We acknowledge there are many ways to approach environmental and social challenges. With our significant heritage in roofs, and your need for maximising the value of increasingly demanding build projects, we are using our roofing expertise to explore how your project goals can be met directly through innovative roofing solutions.

## IDENTIFYING THE GAPS

The research has also allowed us to identify three gaps that architects across the world can address in order to help them:

- gain access to the right information with speed and ease
- work more collaboratively with stakeholders
- choose the right innovative products and materials for the job.



### The collaboration gap

Other stakeholders within the construction process are gaining power, and as a result, the architect's influence is diminishing. But how can architects work effectively with them?



### The information gap

Over one-third of architects feel a lack of case studies prevents them from specifying new materials.<sup>3</sup> How can this barrier be overcome?



### The innovation gap

Some 51% of architects haven't made use of emerging technology or processes such as BIM.<sup>4</sup> Despite the industry press giving these a lot of air time, our study found the uptake to be surprisingly low. Why is this and what can we learn from it?

## THE RESEARCH

Many of the statistics behind this report were gathered when we spoke to 1,850 architects who completed a research survey between 28 October 2019 and 06 November 2019, across Europe, China and Malaysia.<sup>5</sup> While our research methodology is rigorous, we acknowledge there may be multiple explanations and nuances behind some of our research results, which we encourage you to explore further in your own firms and experiences. This report is an opportunity for all of us to unpick important problems and start necessary conversations.

3,4. BMI, Global Architects Survey, 2019.

5. The full list of countries covered in our Global Architects Survey 2019 included: UK & Ireland, France, Germany, Sweden, Norway, Denmark, Netherlands, Austria, Poland, Czech Republic, Hungary, Spain, Italy, Malaysia and China.

When an architect's single action ripples out to have larger positive outcomes in the construction process.

That's **The Architect Effect**.

When an architect's project solves real-world problems with creative flair.

That's **The Architect Effect**.

When the project always uses the best materials for the job.

That's **The Architect Effect**.

BMI Monier ceramic  
rooftile, Smaragd,  
Almere, Netherlands



## Defining The Architect Effect

**The Architect Effect** is most likely to be achieved by architects who have access to all the tools they need. That's where this report comes in.

We'll be exploring what The Architect Effect could look like for projects like yours today, what it could mean tomorrow once some common barriers have been addressed and how roofing solutions could act as a catalyst for some of these changes.

First, let's take a closer look at the most common concerns and aspirations of architects today.

### THE ANTI-ARCHITECT EFFECT

The Architect Effect can also be identified when there is a lack of architectural influence. For example, the collapse of a shopping centre in Bangladesh, where the building was specified to be used for recreation and not heavy machinery.<sup>6</sup> This was known to architects as being avoidable, had an architect been more involved in the final specification of the building's materials or requirements. This tragic example also highlights the necessity of architects having a key role in creating the buildings of the future.

6. The Telegraph, Bangladesh: Rana Plaza Architect Says Building Was Never Meant For Factories, <https://bit.ly/30BpGh>, 2013.

Defending designs  
against cost-cutting.

Solving social issues through  
creative problem-solving.

Dealing with big businesses  
and client demands.

From master builder to link in the chain.  
Your role as architect is undergoing  
a significant transformation.

But when did your voice  
start to get drowned out?



**DichtDach Alpin SO,  
green roof waterproofing,  
parking deck waterproofing,  
Mountain Resort Feuerberg,  
Carinthia, Austria**

# All change: the shifting identity of the architect

## **EXTINCTION OF THE GENERALIST-ARCHITECT**

Increasingly, the identity of the architect is shifting from "master builder" towards the primary "shaper" or "form-giver", namely, a designer, as discussed by the European Association for Architectural Education (EAAE).<sup>7</sup> Outside of Europe, this is also expressed by Ma Yansong, founder of Beijing-based architecture firm MAD, as he says "architects have a duty to put forward more ambitious plans for the future, rather than simply creating what they think developers want." He believes that the role of the architect lies beyond being reactive, stating that "Architects should be visionary".<sup>8</sup>

## **A FRAGMENTED VIEW**

The EAAE also states, "the architect nowadays is rarely ever responsible for more than a segment of the process...[they have] very limited responsibility regarding the outcome of the entire endeavour".<sup>9</sup> While some may challenge this, the "master builder" is becoming rarer but it is something that is still being taught in architectural schools.<sup>10</sup>

## **MISSING OUT ON PROBLEM-SOLVING EXPERTISE**

Categorising architects into this new role of "designer", however, means clients aren't always making full use of your problem-solving expertise. Regardless of the project, and what's appropriate for the client in question, an architect should feel like they can recommend using new and more advanced materials and technologies if they have greater potential to meet or exceed the client's brief.

7. European Association for Architectural Education, The Changing Roles Of The Architect, <https://bit.ly/2ujZLsE>, 2019.

8. Dezeen, Ma Yansong: Architects Need To Talk About What The Future Is, <https://bit.ly/30EA6GQ>, 2017.

9. European Association for Architectural Education, The Changing Roles Of The Architect, <https://bit.ly/2NKZPrY>, 2019.

10. AIA, The Changing Profession: How Architects Can Take Back Design Control, <https://bit.ly/2RyTSzt>, 2020.

# Freedom to specify

**The opportunity to push client briefs is becoming harder. The global architect industry is experiencing a worrying lack of autonomy in the specifying process.**

Across the globe, less than a quarter of architects said they have 'total freedom' to specify new materials, technologies and solutions. While there'll always be some constraints which architects have to factor into their proposed solutions, what is even more surprising is the fact that one in five architects felt they had 'no freedom at all'.<sup>11</sup>

While we know this influence is partly lost to other stakeholders, these potential barriers will be explored in more depth on pages 19-30.

## 76%

of architects don't feel they have total freedom to specify materials, systems and technologies<sup>12</sup>

Not only is the industry missing out on problem-solving expertise, by over-indexing on the architect's focus on design, but when a lack of influence stands in the way of enabling the most appropriate material or technology being used for a project, then it becomes a problem for your role as an architect. It could potentially hinder you from using different approaches, designs or solutions to address some of your clients' (and the world's) biggest challenges.

### WHAT DO WE MEAN BY 'INFLUENCE'?

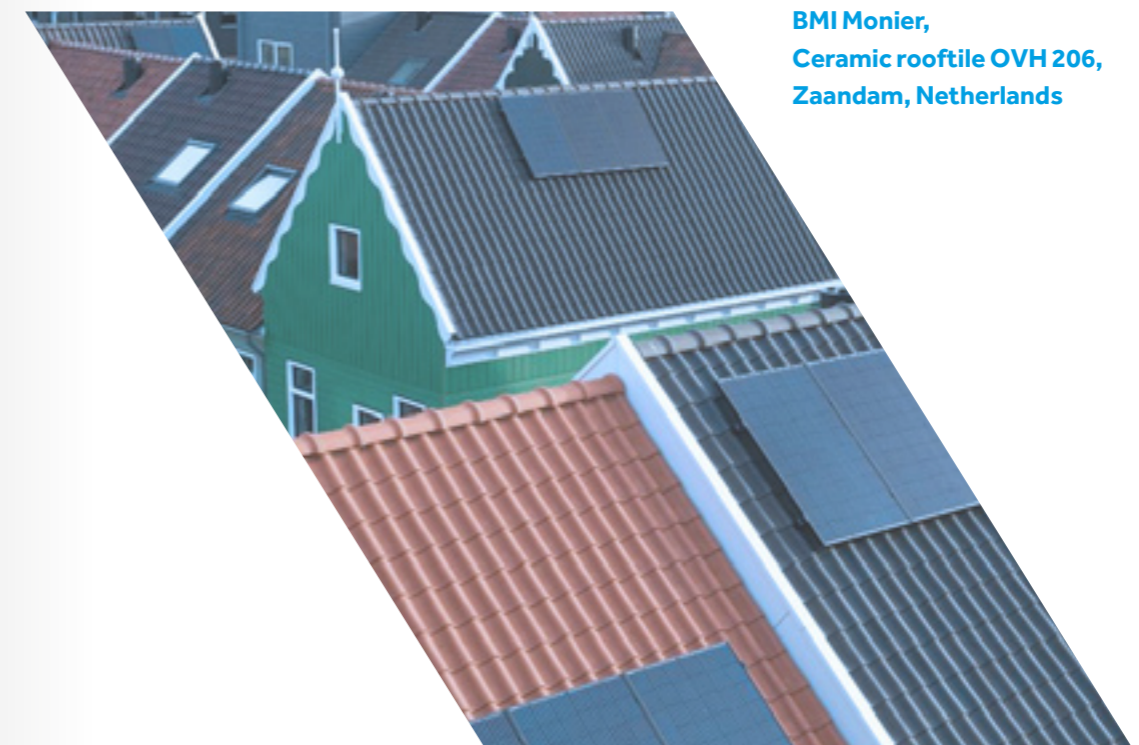
The 'influence' of the architect can be defined as the power you have to perform a significant role in the decision-making process, particularly regarding material specification. It's the ability of the architect to have a compelling overall effect on a project's outcomes that is true to their values and expertise.

"The renewable rather than roaring twenties are upon us."

**Steve Cohen**, American hedge fund manager and philanthropist<sup>13</sup>

"The mindset of the industry needs to change toward the cleaner production of raw materials and better circular construction models."

**Seyed Ghaffar**, Fast Company<sup>14</sup>



**BMI Monier,**  
Ceramic rooftile OVH 206,  
Zaandam, Netherlands

11, 12. BMI, Global Architects Survey, 2019.

13. Fast Company, How to Recycle a Building, <https://www.fastcompany.com/90440928/how-to-recycle-a-building>, 2019.

14. Fast Company, How to Recycle a Building, <https://bit.ly/2toKJSh>, 2019.



Clay tile Turmalin,  
individual housing,  
Czech Republic

# The new global challenges for architects: sustainability and adaptability

**Any loss of influence within the construction process makes it harder for architects to address two of construction's biggest current challenges: sustainability and adaptability.**

Our world as we know it is undergoing metamorphic change. From the most ferocious bushfires in Australia on record to the sinking cities of Jakarta and Venice, the sting of climate change is being more keenly felt than ever before — particularly in terms of increasingly extreme weather.

**77% of architects agree that sustainability is more important in architecture now than it was 10 years ago.<sup>16</sup> It isn't just that sustainability is on the agenda — it's becoming a key metric against which an architect's success is measured.**

On top of this, population growth, resource pressure, a drive to reduce costs and the commoditisation of industries is reaching a new tipping point. Our shifting world is prompting individuals and businesses the world over to feel a new sense of responsibility for protecting our planet. And the construction industry is no different.

## **SUSTAINABILITY**

With buildings being responsible for almost half of all global energy use, as confirmed by the United Nations Environment Programme, sustainability has never been more pressing for an industry building for future generations.<sup>15</sup>

15. CRL, Why Sustainable Architecture Is Becoming More Important for Designers, <https://c-r-l.com/content-hub/article/sustainable-architecture-designers/>, 2018.

16. BMI, Global Architects Survey 2019.



# How sustainability measures up

50%

of architects indicate that the project owner is willing to invest in sustainability<sup>17</sup>

69%

of architects say that sustainability is a key driver or deliverable in at least a quarter of their projects<sup>18</sup>

72%

of architects say that the project owner asks for sustainable materials to be used in projects<sup>19</sup>

100%

of architects say that a drive for sustainability will affect the designs, materials and products they specify in the future<sup>20</sup>



**Center Parcs**, 1,000 holiday homes in recreation park, **BMI Braas** low pitch roofing system (including concrete tiles Harzer Pfanne 7 and F+ roofing components, with underlay Divoroll Top RU), **Leutkirch, Germany**

Big or small, architecture practices across Europe, Malaysia and China are being measured against their ability to design sustainable buildings.<sup>21</sup>

17, 19. European Architectural Barometer by USP Marketing Consultancy.  
18, 20, 21. BMI, Global Architects Survey, 2019.

## SUSTAINABLE GROWTH

### The building

BMI enabled the L'Oréal Hair Research Centre in Paris to reflect their dedication to responsible practices with a self-watering blue and green roof.

### The challenge

The building needed to meet the highest standard of sustainable architecture, reflecting it through both its aesthetics and its performance.

### The material and solution

Architect Frederic Tomat designed a light and airy structure that minimises the impact of greenhouse gases through various measures, including an innovative self-watering green roof and terrace solution from BMI. Through the use of our advanced BMI Siplast Waterproof system, we were able to create a durable solution which supports beautiful flora through a simple blue roof water-retention system.

### The result

The green roof provides a reliable, low-maintenance solution that makes a huge contribution to the building's overall environmental profile through its excellent thermal performance, use of solar energy and ecological water management. It's also qualified for Outstanding Sustainable Building certification from Haute Qualité Environnementale (HQE) — a first for any Research Centre.<sup>22, 23</sup>

**BMI Siplast Waterproof system,  
L'Oréal Hair Research Centre,  
Paris, France**

22. BMI, Case Study, L'Oréal Hair Research Centre, San Ouen, <https://bit.ly/2sL4jrw>, 2019.

23. Be HQE, <http://www.behqe.com/>, 2016.

### DEFINE: ADAPTABILITY

When we say adaptability or adaptable buildings in this report, we mean buildings that both remain durable in changing and/or extreme weather conditions, or can be more easily reconfigured or renovated to meet changing needs.

### ADAPTABILITY

**Reduce. Reuse. Recycle.<sup>24</sup> These three R's are applicable to many industries as an awareness of the earth's finite resources becomes more prominent. In this sense, the capacity to be adaptable becomes an extension of acting sustainably.**

Many architects spend a significant amount of time working on renovation projects, for example, reusing the existing structure for a new purpose, to withstand new challenges, whether environmental or social.<sup>25</sup> By carefully specifying materials, the carbon footprint of the building, which consists of both the material embodied carbon and the operational energy use (and deconstruction at end of life), can be reduced; and secondary materials recycled.

A significant 80% of architects think designing adaptable buildings is more important now than it was 10 years ago. And again, while this might not be a shock, it's an important trend that's closely linked to the long-term sustainability of a building. As when you increase the lifespan and potential usage of said building, this reduces the need to knock-down or to reconstruct elements of a site in the future, and uses fewer resources in the process. Therefore creating adaptable buildings can be seen to be a sustainable practice. Architects are a key driver of building sustainability, with 39% saying the demand for sustainable project features came from themselves.<sup>26</sup>

### TOP OF THE AGENDA

Sustainability and adaptability are increasingly high up on architects' agendas. The effects of climate change, along with urbanisation, changing weather patterns, the introduction of new materials creating new possibilities and the way we choose to live, are only becoming more prevalent. Architects are well placed to own sustainability and adaptability goals and the time to act is now. To maximise the The Architect Effect, you'll need to have access to and expertise in the right materials and technologies, including some of the very newest.

### BMI FOCUS ON NEW MATERIALS AND TECHNOLOGIES

**Aerlox:** High performance concrete tiles that are up to 40% lighter in weight, contributing to a reduced CO2 footprint compared to standard tiles as less material means less transport needs. They are also designed to last longer than standard tiles with reduced moss build up over time.

**Noxite:** A de-polluting technology, which can be added to membranes, uses a photosynthetic reaction to neutralise harmful NOx (nitrogen oxide). Noxite incorporates TiO2 (titanium dioxide) granules that transform harmful NOx (nitrogen oxide) pollutants into harmless nitrates.

**Wolfin:** Wolfin membranes offer the highest water vapour diffusion permeability of all synthetic roofing and waterproofing membranes currently on the market. It's also compatible to be used as an overlay to old bitumen roofs; making it an ideal refurbishment solution.



### SPOTLIGHT ON: THE NETHERLANDS

There is a marked increase in sustainability as a driver in Western European countries such as the Netherlands, where 44% of architects find it on their brief as a key deliverable in at least half of projects. It's likely this is directly linked to the Netherlands' introduction of stricter energy performance labels and efficiency requirements in all of their office buildings, as of December 2018.<sup>27</sup> Poland (40%) and Malaysia (39%) were close behind.<sup>26</sup>



24. Arch Daily, Zero Waste in Architecture: Rethink, Reduce, Reuse and Recycle, <https://bit.ly/2RxRSro>, 2019.

25, 26. BMI, Global Architects Survey, 2019.

27. Lexology, Energy Performance Regulations and Investing in Dutch Real Estate, <https://www.lexology.com/library/detail.aspx?g=dc647d90-b78c-4c89-b94e-6753a33291d1>, 2019.

## ADAPTING TO THE ELEMENTS WITH AERODEK ROBUST PLUS

### The building

Deep in the forests of Vestnes, Northwest Norway, a dream home was being built with Kebony wood that naturally fades to grey over time.

### The challenge

The home owners also wanted a matching colour for their roof that would blend in with the incredible natural environment, as well as being able to cope with the extreme cold winters.

### The material and solution

The product to meet this special demand was AeroDek Robust Plus Pepperstone metal tiles. The unique manufacturing process provides the product with its 'Robust' name and superior strength. It was a lightweight, low maintenance solution that was quick and easy to install. These tiles are also built to be highly adaptable to many environments, being suitable on all roof types and on pitches as low as 15 degrees.

### The result

The home owners were delighted with the 'lifelike' or natural look of the tiles as well as their high quality, all while being low maintenance once installed.

**"Our house is located close to the sea, surrounded all around by Norwegian nature. We wanted a roof which perfectly blends in with nature and our beautiful forest surroundings, while also being maintenance free and environmentally friendly."**

**Torgeir Fiksdal, Home owner**

**AeroDek Robust Plus,  
Norwegian forest home,  
Vestnes, Norway**

# Roofs: The untapped opportunity



**Some architects are already spotting new opportunities to solve sustainability and adaptability challenges. They are rethinking their approach to the roof.**

Roofing materials and systems are an often overlooked and underutilised opportunity when meeting construction's biggest challenges in adaptability and sustainability. Our research has found that 79% of architects have already designed an 'active roof' — including blue, green, solar or depolluting roofs — but 43% of architects haven't designed a roof which directly addresses sustainability and/or adaptability challenges.<sup>28</sup>

#### **DEFINE: ACTIVE ROOF**

When we refer to 'active' roofs this includes recreational spaces, such as swimming pools, running tracks, cafes and terraces, as well as roofs that interact or respond in some way to the environment they are in, such as solar, blue, green and depolluting roofs.

#### **WHERE TO EXPLORE NEXT**

Although there's a significant majority who are already interested in innovative roof uses, and it is encouraging to see that the roof is being considered as an area for innovation, the disparity between those who have built a roof that can be used for leisure purposes (79%), such as a terrace or swimming pool, versus one with direct environmental benefits (57%), such as collecting water, increasing biodiversity or harnessing sunlight, shows there's still room for improvement.<sup>29</sup>

Some roofing technologies are particularly underused. Only:

**4%** have used depolluting membranes

**17%** have used solar thermal systems

**26%** photovoltaic solar<sup>30</sup>

This is surprising given the attention on pollution of the atmosphere and the increased need for renewable energy sources in global news coverage over the last 10 years.

28. BMI, Global Architects Survey, 2019. Results collected as part of a multiple choice question.

29, 30. BMI, Global Architects Survey, 2019.

#### ALREADY LOOKING UP

# 79%

of architects have built at least one type of 'active roof' to solve a problem or fulfil a specific need<sup>31</sup>

# 1 in 4

architects are interested in roofing that increases biodiversity and green space<sup>32</sup>

#### PART OF THE PROCESS

What is encouraging, however, is that the opportunity to specify innovative roofing materials grows as a project progresses. Over half (52%) feel there is a 'great deal' or 'a lot' of opportunity to consider roof functionality at Employee Information Requirements (EIR) or client brief stage. This rises up to 71% at the concept design stage. The better understanding an architect gets of the problems they are solving, the greater chance there is to evaluate the potential use of innovative materials to solve them.<sup>33</sup>

Although perhaps the opportunity for an architect to consider the roof's use is not the same for all — it might depend on the project at hand, or where you are in the world — you can take the insights and ideas in this report and ensure it's considered at the right point so that the opportunity is fully utilised and maximum value is secured from the space.

#### CONSIDERING THE ROOF

In order to specify these roofing materials and technologies, there are some barriers to consider and overcome to maximise your influence on the construction process.



#### SPOTLIGHT ON: CHINA

The difference in opportunity to influence at different stages of the design process is most substantial in China where only 47% of architects feel there is opportunity/demand to consider roof functionality in the client brief — but by the concept design stage this is 76%.<sup>34</sup>



Zaryadye Park,  
Russia

# Navigating the gaps

## THREE WAYS TO INCREASE YOUR INFLUENCE

For architects to specify the roofing materials that solve these global problems, of sustainability and adaptability, we've seen that you need to readdress your influence. But how?

From what you have told us through this research, we've identified three crucial areas that can help you to navigate the evolving world of construction and have a stronger voice in the design and construction process:



### THE INFORMATION GAP



### THE COLLABORATION GAP



### THE INNOVATION GAP

Let's explore what these gaps are, why they need to be addressed today and how they can help you move forward and accelerate **The Architect Effect**, all while looking at some inspiring examples of roofing projects from around the world.

# How to close the information gap

**Introducing new or unfamiliar materials to a project can be difficult. Leave no room for doubt by arming yourself with the right information to inspire and reassure clients, contractors and influencers throughout the design and build process.**

## **MAKING YOUR CASE**

More specifically, the biggest barrier to architects specifying new roofing materials, systems and technologies is, in fact, a lack of *good quality* case studies. Over a third of architects feel this prevents them from specifying new materials in their designs. At a close second was a 'lack of access to detailed product information', answered by just under a third of architects (30%).<sup>35</sup>

Earlier, we noted a significant 76% of architects don't have full freedom to specify new materials. If we look closer at those who feel that they have 'no freedom' at all to specify new materials, the information gap is even greater: almost 75% of this group see a lack of case studies as a barrier.

Manufacturers can provide data and specification text as well as calling on their product experts, but showing how their materials work in context, bringing them to life through case studies is key. Manufacturers have a role to play here and we have provided case studies throughout this report. You can also find more examples on our [website](#).

**BMI Icopal, Noxite depolluting flat roof waterproofing membrane, Hilton Hotel, Amsterdam, Netherlands**



# 76%

of architects don't have full freedom to specify new materials<sup>36</sup>

# 75%

of architects who feel they don't have freedom to specify new materials see a lack of case studies as a barrier<sup>36</sup>

35, 36. BMI, Global Architects Survey, 2019.



### BEYOND BUDGET

Interestingly, although the opposite might be assumed, budget is not a huge factor standing in the way of specification. In all sizes of firms, budget was stated as a barrier for just 16-17% of architects. Risk, however, is a bigger barrier for larger firms: 27% of firms with 50+ employees felt it impeded specification of innovative materials, with 22% of architects in firms that have 20-50 employees thinking the same.<sup>37</sup>

**"I need ammunition to convince contractors not to cut my designs."**

**Senior Architect.** London, United Kingdom

### FRAMING IT RIGHT

Framing is a useful technique to make sure a new idea is presented in the right way for the right audience. This has been practiced by the Makers of Sustainable Spaces group (MOSS) in the Netherlands when providing a top-line view of the potential ROI of green-roofs. For example, with excellent marketing, trendy food and beverage concepts that incorporated the herbs from the rooftop garden, and a chic green space, MOSS group's Casa 400 project — a hotel rooftop bar in Amsterdam — earned a €300K ROI within two 7-month seasons at the end of 2016.<sup>38</sup>

While some audiences might be less impressed by the sustainability factor, they may be won over by saving money in the long term and creating an iconic venue. Rather than framing it as a 'green, feel-good environmental choice' you can have indisputable statistics such as an example return on investment (ROI) up your sleeve.

Understanding the performance and application of emerging materials is an important way that architects can reassert influence in the complex construction process. In this case, knowledge really is power.

Concrete tile,  
Tegalit STAR,  
Individual housing,  
Czech Republic



When expertise leads decision-making.  
That's **The Architect Effect.**

## BMI

### THE BMI VIEW: TAKE ACTION

We understand how difficult it can be to create great case studies, but they are a crucial tool in helping you to persuade clients of the value that innovation can bring.

You could:

1. Create an internal initiative and rewards scheme for employees who create great case studies of their own projects
2. Task more junior team members with finding and collecting great case studies from other sources as part of their learning
3. Get manufacturers and suppliers in to showcase their materials
4. See more innovative roofing solution case studies on our website: [bmigroup.com](http://bmigroup.com)

37. BMI, Global Architects Survey, 2019.

38. Makers of Sustainable Spaces, [http://52.28.156.143/portfolio\\_page/nest-casa-400/](http://52.28.156.143/portfolio_page/nest-casa-400/), 2020.

**NOW THAT'S A COOL ROOF**

**The building**

The BMI Monier CoolRoof system reduces the living space temperature of Malaysian homes up to 10°C compared to the conventional roofs often installed on residential buildings in Malaysia.

**The challenge**

BMI's Research and Design team in Malaysia and Europe has developed state-of-the-art roof simulation software called BMI Monier Roof Physics. The committee of Journal of Building Physics and the US Department of Energy Laboratory acknowledged the software capability.

**The material and solution**

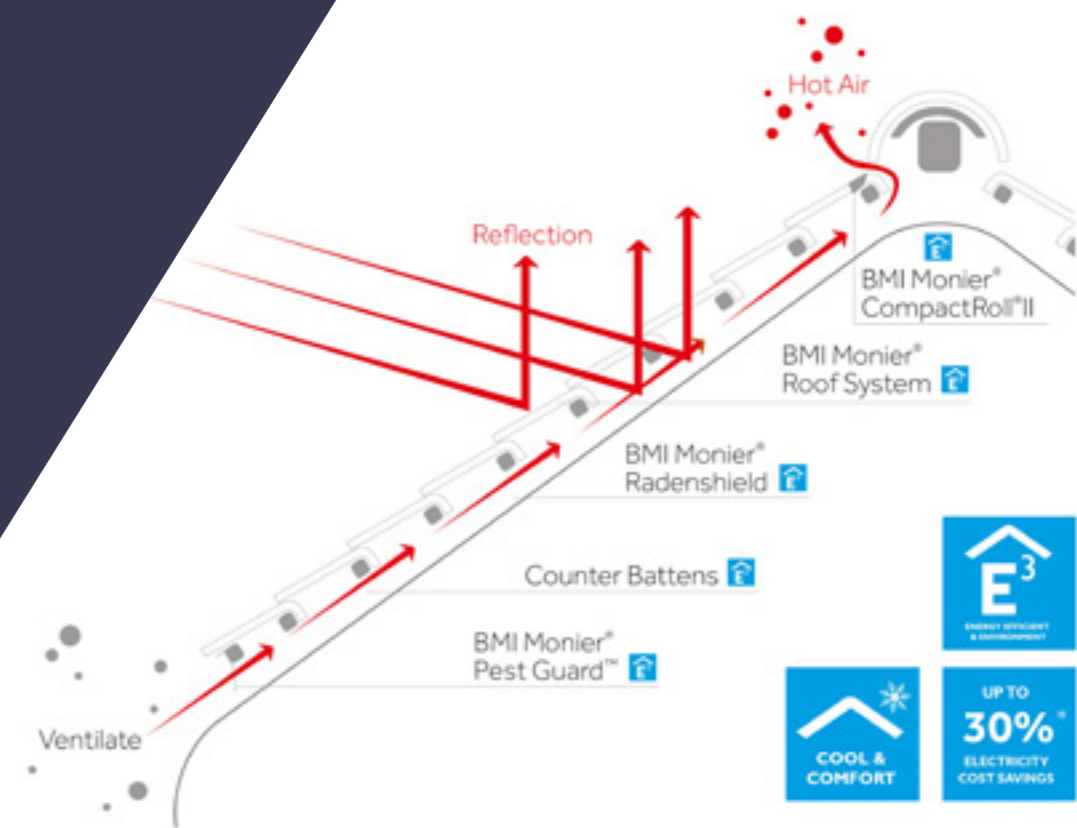
The BMI Monier CoolRoof System keeps indoor building temperatures 10°C cooler through natural airflow and heat transfers, even through the most tropical of weather. The complete solution comprises of a pest guard layer, counter battens and a radiant surface barrier that reflects up to 97% of infrared rays.

**The result**

The system fits entirely under tiles, keeping their neat aesthetic, but also gives you a total protection against tropical weather.

- Cooler home and cost savings
- Reduce up to 60% of air conditioning usage<sup>39</sup>
- Reduce up to 30% of electricity bills<sup>39</sup>
- Less than 2 years payback period

**BMI Monier CoolRoof,  
Malaysia and Europe**



39. BMI Monier Technical Centre validated the data in Europe for tropical weather, in collaboration with Oak Ridge National Laboratory and Lawrence Berkeley National Laboratory, USA.

# How to mind the collaboration gap

**Next, the collaboration gap: understanding the differences between your mindset and that of other players in the process, and assessing how it might impact the project outcomes.**

To understand the changing working practices in the construction industry, we first need to consider two of the fundamental trends shaping the build process:

**1. Buildings are increasing in complexity**

Some 65% of European architects state this as the top trend affecting their role, as they're faced with more complex technical specifications and requirements to meet modern laws and standards.<sup>40</sup>

**2. Construction teams are becoming bigger and more parties are involved**

Building regulators, legislators, contractors, clients and other influencers (such as financiers, property development companies, specialist advisers) have taken some of the influence in specification away from architects.

In particular, architects foresee a strong increase in the role of specialist companies such as engineering firms and other consultants, to cater for the added complexity of builds.

These companies would be sourced for their specific knowledge on laws and regulations, and technical specifications. It also means that to some extent these companies will be the ones held liable if something goes wrong.<sup>41</sup>

So while your role in managing budgets, planning and advising on actual construction might be increasing, a knowledge of laws and regulations for aspects of specialist projects, such as calculations for the construction and performance of an air quality controlled museum or archival storage building for example, might be something you actively want to outsource to other parties.<sup>42</sup>

## SPOTTING THE OPPORTUNITY

The rise in more complex buildings and construction teams presents an opportunity for the architect to be that impartial player in a characteristically adversarial industry. You may have less influence or control overall, but you still have the brief and trust from the client.

Although there is often no longer a single role that is accountable for design responsibility, as we can learn from examples such as the tragedy of Grenfell Tower in London, it is in the interest of safe, functional, golden thread outcomes, to make the process less fragmented, as a facilitator among the many stakeholders.

## BEING A GOOD LISTENER

For architects, a modified approach to working with clients and contractors (and other stakeholders in the construction process) is key to regaining influence in the specification process and meeting their priorities, such as adhering to budgets.<sup>43</sup> In your role you have the ability to be a trusted, strategic project advisor to ensure a balance of potentially competing needs for resources is achieved and the key project vision and outcomes are realised.

## LIMITING FACTORS

As we've discussed, a lack of information is one barrier to overcome for architects. But a wider group of stakeholders making decisions means that there are other factors that significantly limit the influence an architect can have:

- For example, we found 40% of architects said that specifying new roofing materials, systems or technologies was driven by contractors. This reinforces the need for you to trust and work effectively with contractors, to ensure your project requirements are still being met.<sup>44</sup>
- 31% of architects find client briefs a major limitation to specifying new roofing solutions. If we take the idea of an alternative roof use, perhaps this has not been considered in the initial client brief and therefore limits the possibility of exploring an active roof, for example. How often are you able to reshape a brief to drive more value to your clients? Take a look at our [business cases](#) for some specific roof solution examples.<sup>45</sup>

40, 41. European Architectural Barometer by USP Marketing Consultancy.

42. Designing Buildings Wiki, [https://www.designingbuildings.co.uk/wiki/Air\\_tightness\\_in\\_buildings](https://www.designingbuildings.co.uk/wiki/Air_tightness_in_buildings), 2019.

43. RIBA, <https://live.architecture.com/-/media/gathercontent/working-with-architects-survey/additional-documents/>

44, 45. BMI, Global Architects Survey, 2019.



### WORKING WITH THE OTHER ACTORS

Although the rise of importance of other 'actors' in the process is beyond your control, in the same previously mentioned study from RIBA, architects' project management — or lack thereof — was a major sticking point for clients (and contractors too).

Only 56% of commercial clients and 61% of private clients were satisfied with the project management and commercial understanding provided by architects. And 51% of contractors say they're dissatisfied with the architects they work with.<sup>46</sup> So it's clear that there's work to do here to increase understanding and communication of key project requirements, and ultimately build a stronger relationship that allows all parties involved to achieve better outcomes.

### CONTRACTOR INFLUENCE BY REGION

- Countries in central-eastern Europe (such as Czech Republic and Poland) are particularly likely to have contractors as a driver for new roofing materials, with an average of 44% of architects believing this<sup>47</sup>



### SPOTLIGHT ON: NORDIC COUNTRIES

Client briefs were seen as less of a barrier to specifying new roofing materials or systems in Scandinavian countries such as Sweden and Norway (only a challenge for 22 and 23% of architects, respectively).

This suggests that in Scandinavia, clients have an overall less prominent role in the process, perhaps this is due to Scandinavian architecture firms reputation for adding value and delivering innovation, which fits with the region's culture based around well-being, slow living, 'hygge' and a progressive stance on 'environmental issues [that] are intrinsic in Nordic politics and policy'.<sup>50</sup> Firms such as White Arkitekter<sup>51</sup> in Sweden and BIG in Denmark<sup>52</sup> are well known and trusted.

46. RIBA, <https://bit.ly/3auD3i3>, 2016.

47, 48, 49. BMI, Global Architects Survey, 2019.

50. The Green Hub, <https://thegreenhubonline.com/2018/05/17/what-we-can-learn-from-the-worlds-most-sustainable-countries-in-scandinavia/>, 2019.

- Meanwhile in Western Europe (i.e. France and Germany), only 31% of architects saw contractors as a driver for roofing innovation<sup>48</sup>
- Contractor influence also varies according to sector. Only 36% of architects in the Arts & Culture sector felt contractors pushed for new roofing materials they had not specified before, as opposed to 48% of architects in the Hotels & Leisure sector<sup>49</sup>

The collaboration gap between architects and clients is central to improving the construction project process. Although it is commonly agreed that traditional contracts themselves don't always allow for high levels of collaboration and innovation, this is a key area for architects to investigate further how they work with clients to influence the creation of the brief and the results that come out of them.

### THE BMI VIEW: TAKE ACTION

#### 1. Get to know what your stakeholders value most

Your client might think very differently to your contractor. Take a look at our other materials on these topics here: [bmigroup.com/TheArchitectEffect](https://bmigroup.com/TheArchitectEffect)

#### 2. Network

Although it can be hard to find time to network on top of the day job, having contacts across the industry is a way to potentially improve the outcomes of your work. Networking can increase your influence when it comes to collaborating on a build project, helping you to maximise the value of each of your projects. RIBA also found "architects selected through personal recommendation or because the client had used them before were rated significantly higher than architects selected in other ways, such as advertisement, framework or via novation on a design and build project."<sup>53</sup>

#### 3. Develop your project management skills

Consider asking your firm to invest in some management skills training for you to unlock better ways of working with both your internal colleagues and external stakeholders.

BMI

When everyone's on the same page throughout the project lifecycle. That's **The Architect Effect.**

51. White Arkitekter, <https://whitearkitekter.com/>, 2020.

52. BIG, <https://big.dk/#projects>, 2020.

53. RIBA, <https://bit.ly/3auD3i3>, 2016.

### HAPPILY EVER AFTER WITH EVERGUARD

#### The building

A logistic warehouse of Construction SCAB, in Canelas, northern Portugal.

#### The challenge

The building belongs to a construction company called SCAB. They needed a flat roof system that would keep their large building and all its contents fully waterproof and safe—all 3,200 squared metres of it.

#### The material and solution

BMI installed EverGuard TPO 1.5 mm with Thermazone insulation for this large roof.

The EverGuard membrane has low degradation characteristics contributing to the longer life of the whole roof.

But BMI didn't just provide a high-quality, durable roof here, we supplied the whole system, including the approved base deck plate and insulation, to give specifiers peace of mind that all the components would work seamlessly together. It took 3,200 m<sup>2</sup> of Thermozone insulation, 3,400 m<sup>2</sup> of EverGuard membrane and 22,000 fasteners to complete the whole roof.

The EverGuard membrane also comes in different colours. By selecting white the warehouse gained an extra benefit from the roof and building being more thermally efficient as the white colour has greater solar reflection.

#### The result

This was the first roof in Portugal to be installed with the EverGuard system. Now it's business as usual for SCAB, with their highly durable, high quality roof set to protect them under a long warranty period for years and years to come.

Logistic warehouse of Construction SCAB, Canelas, Portugal, BMI EverGuard TPO



# How to bridge the innovation gap



**There's a substantial gap between the technology available and the uptake by architects. But new design and project management software can be an enabler of greater understanding and control.**

## ADDING TECHNOLOGY INTO THE MIX

Construction teams are generally bigger and more complex than ever before, with projects often requiring more diverse teams of people and roles to accommodate fast turnarounds and action of complex requirements. Then throw new technology into the mix. For some projects and teams this actually makes the process more complex and requires more extensive, better quality collaboration.

**90% of architects surveyed had not worked on a project facilitated by a fully structured BIM process.<sup>54</sup>**

When asked, our survey identified a significant innovation gap. Over half (51%) of architects haven't made use of emerging technology or processes such as BIM, AI and 3D printing. Only 10% of architects have worked on a project adopting a structured BIM process; it's frequently spoken about in architecture journals, for example, but at the moment that doesn't reflect most architects' experiences.

## THE REAL BIM

However, new technologies and working processes can foster more collaborative building practices, as well as rooting their designs in data. BIM, for example, is a process for managing information which helps all stakeholders in the construction process make more informed decisions. And as explored in the RIBA survey, suggesting contractors and clients are often dissatisfied with architects' commercial understanding, modern authoring tools and suitable plugins can help architects consider and contextualise a wider range of factors in their design.

Following a BIM process is a specific example of where knowledge of digital information exchange and Common Data Environments can bring you into a more influential position within a complex project, for example. In 27% of the architectural projects where a BIM-model is used, a main contractor is involved. Despite this, architects remain the leading party for updating and accuracy of the BIM-model.<sup>55</sup> This places you in control.

## A BIM REVOLUTION

Joe Eichenseer, building solutions team manager at IMAGINiT Technologies, doesn't see BIM going away any time soon. He does, however, see it evolving to keep pace with the economic climate. He predicts impending developments such as Augmented Reality (AR) could replace more traditional building walk throughs and prevent miscommunications between 2D and 3D CAD drawings. Additive manufacturing (AM) applied to BIM could also give rise to scaling the process of 3D printing building components on site. This could enable more competitive streamlined prototyping and design personalisation.<sup>56</sup>

## TIME-SAVING TOOLS

BIM can save you time on projects by helping you manage the process more efficiently.

Other time-saving tools include:

**Enscape** – [enscape3d.com/features](https://enscape3d.com/features)  
Real-time visualiser for Revit, SketchUp, Rhino, ArchiCAD and Vectorworks

**One Click LCA** – [oneclicklca.com](https://oneclicklca.com)  
Quick environmental impact calculator

**Trimble Sketchup** – [sketchup.com](https://sketchup.com)  
Used for concept design

**Blender3D** – [blender3darchitect.com](https://blender3darchitect.com)  
A free, open-source rendering and visualisation package

**Rhinceros** – [rhino3d.com/gallery/5](https://rhino3d.com/gallery/5)  
Concept 3D modelling tool, good for free form or flowing shapes

54. BMI, Global Architects Survey 2019.

55. As answered by European architects. European Architectural Barometer by USP Marketing Consultancy.

56. Engineering.com, Beyond BIM: What's Next for the AEC Industry? <https://www.engineering.com/BIM/ArticleID/11705/Beyond-BIM-Whats-Next-for-the-AEC-Industry.aspx>, 2016.

# Roofing technology game changers for architects

## WHO IS ADOPTING NEW MATERIALS IN THEIR PROJECTS?

**34%**

of architects from Denmark have used heat reflective roof surfaces in their designs — significantly higher than any other country



Sport, water and transport sectors were more likely to make use of offsite modular builds than other sectors, although the numbers were still fairly low (15%, 16%, 17%).

## NEW MATERIALS, NEW POSSIBILITIES

Which of these innovative roofing materials, systems or technologies have you used in your designs?<sup>57</sup>

**14%**

Specialised lightweight materials

**26%**

Photovoltaic solar

**4%**

Depolluting membranes

**25%**

Heat reflective surfaces

**17%**

Solar thermal

**26%**

None of the above

57. Featuring the percentage of architects who have used each of these roofing materials, systems or technologies from our Global Architects Survey 2019.

58. Space 10, <https://space10.com/project/digital-in-architecture/>, 2019.

## MOVING WITH THE DIGITAL AGE

As we enter an increasingly digital age, technology will play a greater role in the design and construction process. As articulated by SPACE10, a Copenhagen-based research and design lab, "as these tools become more accessible to the everyday person on a daily basis, it is important that designers are open about the ways in which they are used—for what, and why."<sup>58</sup>

Technology can play a part as a catalyst in redefining and reframing your role.

## THE BMI VIEW: TAKE ACTION

1. Do a quick stakeholder analysis:  
How might the process, technology or software selected impact people in your firm and in your teams?  
How might it change how you work together?
2. Arrange demos
3. Get first-hand advice from peers

**BMI**

When problems are solved using innovative solutions.

That's **The Architect Effect.**





# Looking forward

## THE ARCHITECT EFFECT IS YOURS

As an architect today, you are faced with many changes in your working environment and pressures from those around you.

Through understanding and addressing **the information gap**, **the collaboration gap** and **the innovation gap**, you can assert your authority in design leadership while embracing digital process solutions and developing strong working relationships to make the best decisions on behalf of your clients.

And in your world of constant flux, the roof presents an unwavering opportunity for you to address sustainability goals, while asserting your expertise and influence. The roof will always exist, it can now be up to you to say how hard it works.

To discover all the ways BMI's materials and technologies can support and inspire your projects head to [bmigroup.com/TheArchitectEffect](https://bmigroup.com/TheArchitectEffect)

"We see endless potential in roofs and are always looking for new ways to add further value, beauty, sustainability and peace of mind."

**Dr. Christian Pohl**, Director BMI Technical Centre

**BMI Icopal,**  
**LAW Profi-Dicht,**  
**Schweriner Schloß,**  
**Schwerin, Germany**





When the building answers  
to community needs.

That's **The Architect Effect.**

When aspirations align  
with objectives.

That's **The Architect Effect.**

When the best materials and  
designs are chosen for the job.

That's **The Architect Effect.**

What does **The Architect Effect**  
mean for you and your projects?

# Who we are

## BMI AND OUR BRANDS

As a global leader in the roofing space, we're proud to have our products installed in over half a million new roofs a year, with 200 million m<sup>2</sup> of roofing material sold annually.

Today, we're stronger than ever — servicing local customers in 40 countries worldwide — but still completely devoted to continuing our journey together with our customers and partners.

Our merger of long-established manufacturers Braas Monier and Icopal,

along with the brands they represent, now gives us an unrivalled range of pitched and flat roof solutions, as well as ground and infrastructure waterproofing solutions. So, it's likely that you may have already experienced one of our products or materials.

## BECAUSE IT'S NEVER JUST A ROOF

To us, it's never just a roof, we see endless possibilities. Roofs are our protection, our community, our salvation, our recreation. They are the lens through which we view the world. We hope you join us in this vision.

## Are you ready to be part of The Architect Effect?

Find out more about how BMI's expertise, technologies and materials can support your projects at [bmgroupp.com/TheArchitectEffect](https://bmgroupp.com/TheArchitectEffect)

## FURTHER READING AND INSPIRATION

### Sustainability

Dezeen, Foster + Partners Sustainability Guide:  
[www.dezeen.com/2019/12/12/foster-partners-sustainability-manifesto-climate-change/](https://www.dezeen.com/2019/12/12/foster-partners-sustainability-manifesto-climate-change/)

### Adaptability

A new rooftop oasis in Amsterdam:  
[www.moss.amsterdam/2018/02/27/the-financial-advantage-of-green-roofs/](https://www.moss.amsterdam/2018/02/27/the-financial-advantage-of-green-roofs/)

BMI Siplast Waterproof details and connections:  
[issuu.com/jadsol/docs/name\\_58](https://issuu.com/jadsol/docs/name_58)

### Innovation

Dezeen's High-Tech architecture guide:  
[www.dezeen.com/2019/11/04/high-tech-architecture-guide/](https://www.dezeen.com/2019/11/04/high-tech-architecture-guide/)

Case study by BIM+ — BIM helps deliver complex Central Dublin office renovation:  
[www.bimplus.co.uk/projects/case-study-bim-helps-deliver-complex-central-dubli/](https://www.bimplus.co.uk/projects/case-study-bim-helps-deliver-complex-central-dubli/)



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BMI Group was born out of a recognition that customers now expect a single point of expertise to help them find their ideal roof. Bringing together some of the industries most trusted brands to become the largest supplier of both flat and pitched roofing and waterproofing solutions throughout Europe, BMI Group has over 165 years of experience and innovation to offer its clients. As a Standard Industries company, BMI Group, headquartered in London, has the support, reach and resources of a global enterprise. With over 120 production facilities across Europe, Africa and Asia, and more than 9,500 employees worldwide, the business is well positioned to provide an unparalleled level of service to homeowners, specifiers, contractors, property owners and developers. Find out more at [www.bmigroup.com](http://www.bmigroup.com).