

WHITE PAPER

Training in the construction sector: strategic or tactical?

A Symetri Construction Sector Survey



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The importance of training

In order to best serve our customers, we need to understand their training needs. So we recently conducted a survey of a wide range of architects, engineers and contractors. The survey gathered responses about the importance they give to training, and how they make decisions about focus areas and individuals' training needs.

The top three considerations emerging from the survey:

- **Empowering the individual:** With complementary training options, bringing classroom and e-Learning together, individuals can address knowledge/skills gaps as they arise, at their own pace, with no disruption to business as usual.
- **Continuous improvement:** The industry still places a premium on classroom training to build core skills. It's a popular and time-honoured approach. The lessons it delivers can, however, be made more enduring. Companies are now seeing the additional and sustainable value of complementary methods such as e-Learning and video tutorials. The question has to be asked: Is classroom training alone sufficient or should it work in conjunction with other approaches geared towards continuous improvement?
- **Measuring the outcomes:** The construction sector is starting to assess training needs and establish how effective the training has been, to plan more effectively and understand ROI and how to optimise it. There is now a reliable, self-administered solution for doing just that.

Sample Composition

There were 152 respondents to this Symetri survey, from private and public sector organisations. Among the job roles represented were CAD Managers and Technicians, BIM Managers and numerous other roles focused on BIM, Design Engineers, Civil Engineers, Surveyors, Architects, and a range of senior executives.

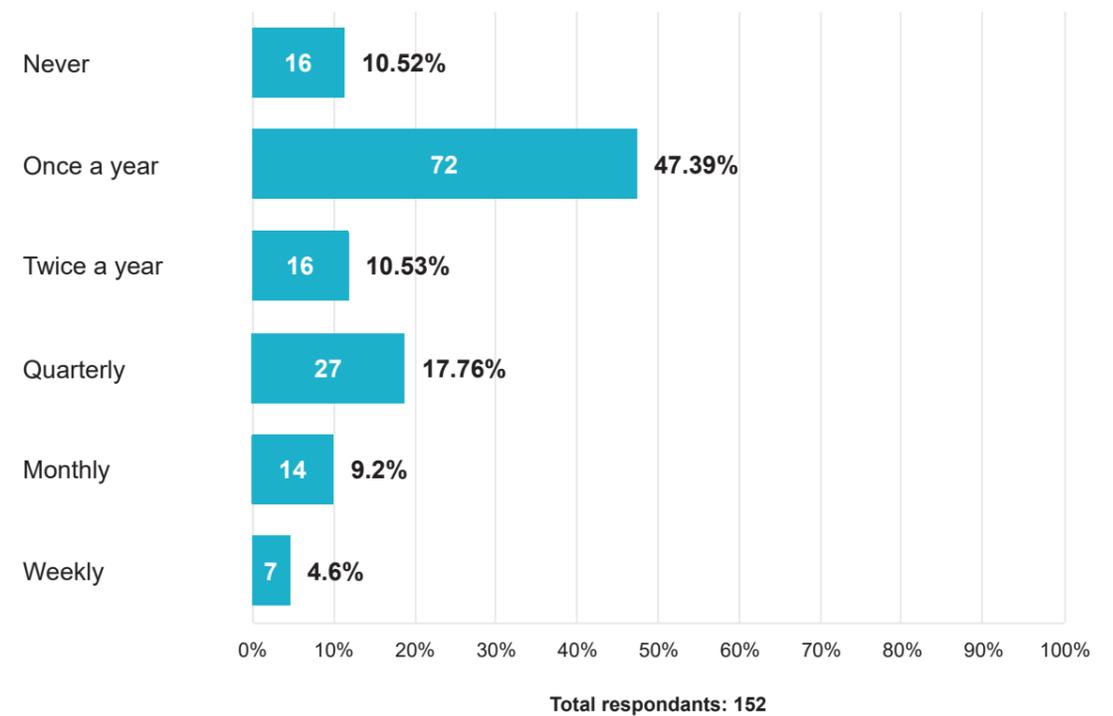
Executive Summary

Keeping pace in a rapidly changing sector

There is an implication in the unceasing innovation in software, that internal skills be regularly reviewed and refreshed when necessary, or new ones taken on board.

Our survey discovered that although one in ten respondents regard training as a monthly requirement, around one in ten overlook the need for training. With more than 47% undertaking training just once a year, it can be assumed that there's a widening skills differential between organisations. Some will benefit from this emphasis on training, while others may well suffer from the lack of it.

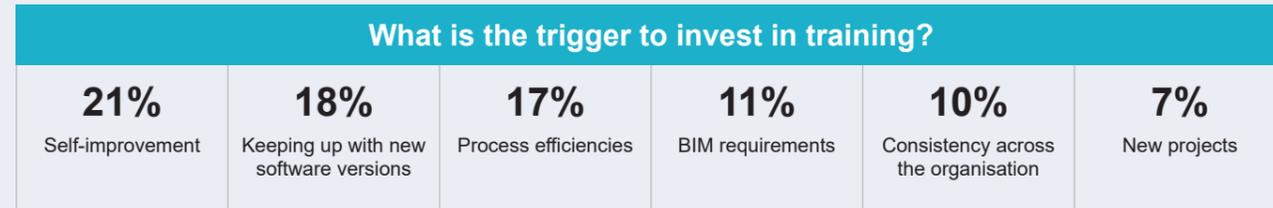
How often do you undertake training?



Confidence in your ability to deliver; On-time and on-budget

Technologies such as the increasing on-site use of mobile devices and telematics, and Virtual and Augmented Reality, are being increasingly adopted by construction sector leaders. Digital technologies that drive collaboration across the construction chain – together with software applications that facilitate the processes involved in Building Information Modelling (BIM) – are also becoming more widely adopted.

In their wake, if an organisation drops behind in adopting such technologies, there is a possibility that they may fall behind in competitiveness. Clients look for the greatest possible reassurance of favourable project outcomes. Whilst such reassurance can come from people, experience, track record, and reputation, it is demonstrably stronger if accompanied by capabilities with the latest tools available.



Other triggers include: Keeping up with the latest version of software 9%, retraining staff 3.5% and new starters 3.5%

Competitive advantage depends on improving operational efficiencies, and productivity, while reducing costs and risks. A new collaborative construction environment is being shaped by BIM. The result is that an organisation's services assume greater value the more they are clearly communicated and the more transparent they are. Knowing how to achieve this communication and transparency is increasingly project-critical.

Ensuring ROI

The survey also looks at the actual process of training and, of equal importance, follow through. Value can only be measured if mechanisms are in place to ensure that lessons were learned, skills enhanced, and the competitive edge further strengthened.

Analysis

How the construction sector views training: A snapshot

Section One: Empowering the individual

A commitment to training is a commitment to excellence: What holds you back?

We asked our respondents what barriers they perceived to training and almost one in five replied that there were no barriers. These are likely to be organisations that commit to constantly moving forward, improving team skills, and benefitting from the consequent improvements in quality outputs, better use of time, and increased productivity.

42%

Time away from projects

30%

Cost of training

A high-profile commitment to training has an impact on a firm's reputation

Clients, and indeed partners with whom an organisation may be partnering on a project, read such a commitment as a demonstration of quality people and a responsible business. A regular, supported, and strategic approach to training becomes a publicisable feature on an organisation's website and through the social media it employs. It sends out a positive message.

18%

Respondents identifying new software as a trigger for training
New software creates new efficiencies. It also requires new skills.

Alongside time and costs come people. People are a major cost and often one of the prime investments of a business. It's self-evident that the better they are at what they do, the faster they can do it, and the lower the cost.

Is training a nice to have, or an embedded essential into your organisation's culture?



Total respondents: 152

Another year, another skill

Self-improvement emerged in the survey as the prime trigger to invest in training, yet the majority of respondents admit to undertaking training only annually.

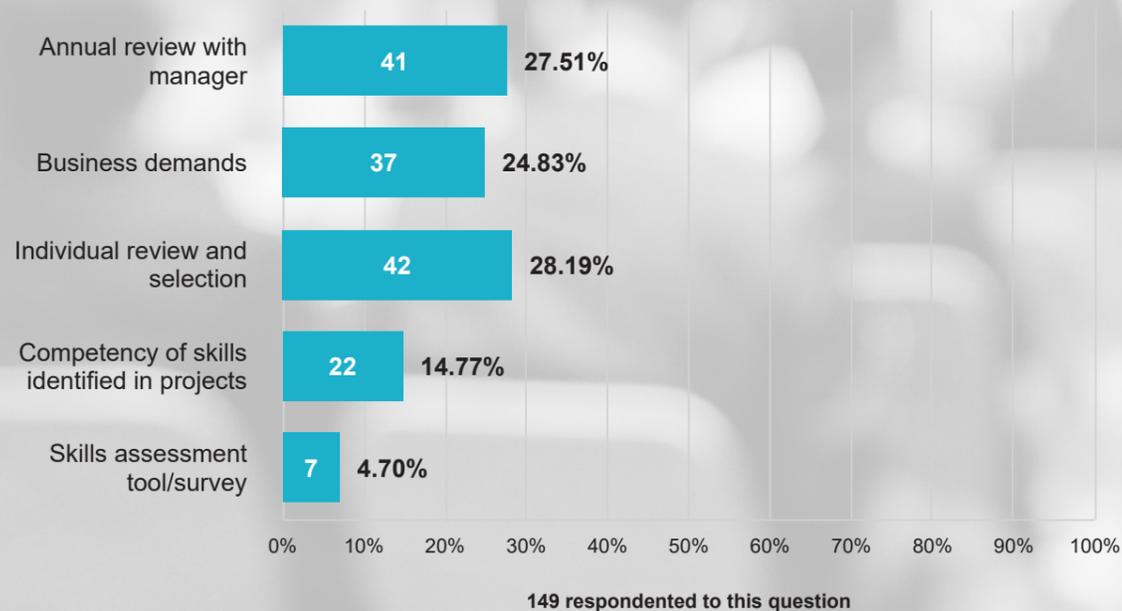
A committed training culture prevails among 50.66% of organisations and nearly half have a less structured approach, viewing training almost as a luxury; an 'add-on' to what a company does rather than a means to do it better. 'Self-improvement', however, naturally leads to team improvement, which leads to company-wide improvement.

This should be seen as a goal by any size of company, from the largest corporation to the smallest firm. Symetri has helped train many small to medium sized companies, among whom we have encountered many pioneers of technology adoption and advanced competence. Clients do not expect lower quality from smaller firms and will not accept quality compromise from any size firm.

Neither should any size of firm accept less than the best in skills from the people it employs.



How are training needs determined?



Training starts with the individual

It was interesting to note that the top three decision factors in determining training needs assume relatively equal weight; 'demands of the business' comes a close third, at 24.83%, after annual reviews with management (27.51%) and individual reviews and selection (28.19%).

In addition, one in three respondents state that, on a personal level, their job role requires a certain number of CPD training points/days within specified time periods. Almost a third of companies also acknowledge a requirement for intermediate and/or advanced training:

- ✓ Embrace continuous improvement
- ✓ Ensure business readiness
- ✓ Rise to each new challenge

Somewhere in this delicate equation lies the answer; a way of avoiding regular staff absences if classroom training is required, reducing training costs, and yet optimising skills on a continuous basis.

Symetri believe that blended learning (the combination of classroom training and e-Learning) addresses each requirement; embracing continuous improvement within the company culture to make sure the company is in a perpetual state of readiness for the next project, the next challenge, the next technology, or simply just the next software release. We explored the approach further with the survey respondents.

Section Two: Continuous Improvement

"The key is time after training to relearn what you have learnt"

– A survey respondent.

By definition, classroom training requires a location that may be out of the office. Symetri run training venues in Central London, Enfield in North London, and Cambridge, while also offering training services at customers' own premises. Instructor-led training, in a dedicated space, remains the fundamental training platform for most respondents (66.5%), but it can, of course, be further augmented with online and e-Learning support to consolidate knowledge outside of the classroom.

In this regard, a disconnect is in evidence. While most prefer to be in a classroom, 42% (as previously identified) see time away from the office as something of a barrier to undertaking training. Other methods are gaining in popularity and suitability for the construction sector.

What is your preferred method of training?			
66.5% Classroom	19.5% e-Learning	8% Videos/YouTube	6% Ask a colleague

Everything you need to know, when you need to know it

Perhaps stimulated by changing 'digital' behaviours that have driven this trend, e-Learning, for example, has come of age. Almost 20% of respondents now identify e-Learning as a preferred training method, and 8% identify YouTube. Online methods are on the rise despite current apparently low rates of usage. When we asked if it would be helpful if a training project were to be split between classroom and online, 60% said that it would, while 40% said it wouldn't.

Forgotten, but not gone

A revealing comment came from one respondent, who said: “Key is time after training to relearn what you have learnt”. It has famously been observed that more than 50% of what we learn is forgotten within an hour, two thirds by the end of the day, and 80% by the end of the month¹. This is certainly the case if the skills aren't used right away or on a regular basis.

There have been many advances in e-Learning tools available for the specific requirements and workflows within the construction sector, designed to give individuals control over the pace of their development. More than simply lessons delivered online, such solutions can be interactive, enabling users to ask questions through Live Chat support. Organisations can also tailor the content, adding their own workflows to the pre-loaded content which covers a wide range of the most-used software solutions applicable to the sector. These include 'just-in-time' training on Autodesk software, together with CPD-certified training courses, and personalised learning paths.

Combining training resources and methods is the essence of continuous improvement and the enduring and sustainable value of blended learning. This is closely tied in to measuring outcomes and effectiveness, to ensure peak performance regardless of any time lapse between training and the application of the skills thereby acquired.

Measuring the outcomes

Ultimately, training must pay dividends, it must get results. If continuous improvement is the goal then there must be a way of measuring if the improvements have been realised. The most evident measure of effectiveness, according to the survey respondents, is in seeing its proof; visible improvements in project quality. It is worth considering if this way of assessing effectiveness is subjective, when what is really needed is a reliable and objective measure.

Measuring training effectiveness				
Visible improvements in project quality:	How the individual feels about their skills:	Manager observation:	Skills assessment tool/questionnaire	Mixture of all areas:
39.5%	24.5%	17%	14%	5%

When skills assessment is based on objective evaluations such as regular 'testing', which individuals can undertake themselves online, sharing results and identified remedial actions with senior management, the chance of skill slippage is removed.

A plan to succeed

Depending on seeing the result of training through improved project quality (identified by respondents as the most-used method of training evaluation within the construction sector), is a high-risk approach. If the expected, or hoped for, quality improvement does not materialise, what then? Surely, it's a far more robust approach to know ahead of project commencement that the quality will improve?

¹. Observed and confirmed in various forms by many, but first discovered by German Psychologist, Hermann Ebbinghaus, in the 1800s.

Conclusion

“The only thing worse than training your employees and having them leave, is not training them and having them stay”

– Henry Ford.

Driving consistent quality

The decision to train or not to train is a decision about being proactive or reactive; keeping ahead or having to catch up from behind. People with less than enhanced skills can inadvertently cause problems, sometimes not spotted until they have used up time, or cost money. Yet time and money are among the perceived barriers to training. A further barrier is around time absent from the workplace. Few would disagree with the importance of quality outputs. Quality comes from people. The greater the skills, the higher and more consistent the quality.

Becoming strategic

Is the industry keeping pace with technology? It depends on whether a company sees training as a strategic imperative or a tactical response; an opportunity or a pressure. With 47.39% of respondents seeing training as a once-a-year requirement, and half seeing it as no more than 'nice to have', there is clearly a need to make training more accessible, removing the inconvenience of staff absence, and providing measurable results.

Refuelling the business

Overall, the survey highlights the need for a more integrated training method; one that aligns with the day-to-day requirements of the business and the ever-present demands of current projects. Driving the business forward does not have to entail putting it on hold, any more than refuelling an aircraft necessarily entails landing it.

Blended learning – the integration of classroom training with online resources and e-Learning solutions – is about using all the strategies available. Our respondents favour this approach, with 60% saying they prefer a combination of classroom/e-Learning and 19.5% leaning towards e-Learning.

It may, as some respondents said, be 'nice to have' training, but how much nicer would it be simply to win more business, gain more respect from clients and staff, and have more confidence in keeping pace with our digital future?

Final Thoughts

Symetri has been supporting construction customers, with technology solutions, services, and training for over 30 years. Our trainers come from a wide range of industry roles, directly in the construction sector. We currently provide around 100 off-the-shelf training courses as well as courses tailored to the specific needs of our customers as and when required. To support continuous learning, we provide e-Learning and skills assessment tools.

If you want to keep pace with the changing digital nature of construction, seek to embrace blended learning within your organisation (regardless of size) to make continuous improvement core and central to your success, or simply want to know more about the strategic approach to deriving lasting value from training, get in touch.

Appendix: Training tools

There are two leading software solutions supported by Symetri, which offer a foundation for personal and organisational development: KnowledgeSmart and Pinnacle Series.



Making the process of evaluation easy and inexpensive, the KnowledgeSmart solution offers pre-defined assessments through questions around a variety of core industry technologies such as Autodesk, Adobe, and Bentley, as well as key BIM Level 2 and BIM Management processes. According to the individual's responses it produces a gap analysis based on industry performance (anonymised benchmarking of peer against peer and company against the industry).

The understanding of what it is that the individual or team needs to know then informs the learning path schedule within Pinnacle; which includes timelines for completion.

The tests incorporated in KnowledgeSmart can also be used to make your recruitment more cost-effective and precise. As much as you can use it to assess skills levels of staff, you can do the same with potential staff, testing if a potential recruit is indeed the expert he or she says they are.

KnowledgeSmart enables you to identify skills gaps that require foundation training; identifying the courses required.



The Pinnacle Series e-learning solution offers on-demand, just-in-time training. The gaps identified through the KnowledgeSmart assessments become the basis of Pinnacle Series training and/or learning paths. Pinnacle Series offers positive reinforcement to encourage the individual, responding with instant feedback and guidance to Q and A 'measurement' tests.

Pinnacle Series comes pre-loaded with workflows, cheat sheets, videos and content on Autodesk software, Adobe, Microsoft and more, but you can also add your own content. Management can assign content to individuals to ensure they follow a path towards eradicating their own identified skill gaps. Organisations can add their own modules on how to work the phone system, where not to park, Health and Safety procedures, right the way through to guidance for complex BIM workflows. The great thing about it is that you can make it into a repository of knowledge covering whatever customised content you wish to add. All available at the time the user needs it.

Your internal subject matter experts can load content onto Pinnacle Series to de-risk the possibility of knowledge loss. By sharing knowledge in this way, you help individuals to gain credibility and boost the internal recognition of subject matter experts.



Pinnacle Series is CPD-certified so any modules completed within it contribute towards an individual's annual CPD requirement.

At SYMETRI, We empower our customers with expertise, leading edge technology and services, so they can enjoy the journey from product concept to implementation.

We work with you to tailor digital BIM, product design and lifecycle solutions to help you work smarter and do more with less. That's why our partnerships are long lasting.

With over 30 years' experience, more than 10.000 Customers worldwide we work together as a trusted partner and extension of your team.

Our 450 people strong team work from 27 locations around the world, across vertical industries, delivering a premium service with a global infrastructure and a local presence. We adopt the latest technology and agile methodologies so, even as technology changes, our relationships last a lifetime.

SYMETRI
ADDNODE GROUP

Symetri
Design Technology Centre
8 Kinetic Crescent
Innova Business Park
Enfield
Middlesex
EN3 7XH

T: +44 (0)345 370 1444

E: info@symetri.co.uk

W: www.symetri.co.uk