Construction Plant Operator Supply and Demand

CPA Member Research Report

November 2017

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Acknowledgements

Skyblue Research Ltd would like to thank representatives from the CPA and CITB (the Steering Group) for their continued support of this project, and for creating multiple opportunities for us to engage with stakeholders in the plant hire industry.

Most of all we would like to thank the individuals from **50 UK-based CPA member businesses, 10 training providers and 10 contractor organisations** that have spared their valuable time to complete an interview or survey with the Research Team between June and August 2017. This report seeks to reflect their sentiments, their opinions and experiences as honestly and objectively as possible to help shape a workforce strategy that will benefit their organisations, and others in the plant hire sector in the future.

Limitations of the Research

The primary research process has successfully engaged 50 CPA member organisations distributed across the UK, sampled by size and geography. Whilst this is thought to be the largest single sample of CPA members researched in recent years at depth around the theme of workforce development, it is still a relatively modest sample in statistical terms. We therefore advise some caution in the interpretation of the data and recommend that findings not be generalised to the entire sector of 1,600 CPA members. The research is a valuable guide, however, as to the thematic areas of importance and priority reflected in the plant hire community during 2017 and should therefore be used as a contributing tool to inform strategic development; and continue to shape dialogue with the industry about how to tackle market failures.

Introduction

The Construction Plant-hire Association (CPA) commissioned Skyblue Research to examine the supply and demand of plant operatives in the construction industry. Construction plant is on the critical path of all infrastructure and building projects and the plant needs skilled and competent operators if a project is to be delivered safely, on budget and on target. An adequate supply of competent operators is therefore essential. Plant owners, operators and contractors therefore need to forecast and manage labour supply, including recruitment and retention of the existing workforce over the next 5 – 10 years.

The total number of plant operators in the UK is not known, nor is the degree of entry/exit from the labour force, or expected demand. According to the Construction Skills Network forecast[1] there are around 45,000 Plant Operatives working in construction. However, the largest plant operators registration scheme, the Construction Plant Competence Scheme (CPCS) has around 180,000 registered plant operators. In addition to this there are several other card schemes (including NPORS and LANTRA) and there are believed to be a large number of operatives, predominantly working as labour-only or in the SME sector, who do not hold plant competence cards.

To date it has not been possible to accurately determine the reasons behind these discrepancies, although some potential factors which may have had an effect have been identified. These are discussed in detail in the report.

Firms with plant operatives also operate with different business models; some will employ their own operatives and own the plant, some will employ operatives and hire the plant, some will provide the plant for hire and agencies will provide the operatives for hire.

The aim of the Supply and Demand project is therefore to gain better data which can be used for planning and implementing recruitment and upskilling programmes in both general and specialist plant construction operative areas. Specialist plant operatives are those whose primary role is the operation of plant equipment. General plant operatives are those with plant operation as part of a wider role, for example, roofing workers using elevated platforms.

Role of the CPA

The Construction Plant-hire Association (CPA) is the leading trade association for this sector in the UK and CPA Members supply 85% of hired plant to the construction industry. Established for 75 years, the CPA has over 1,600 members, with premises in the City of London, and a permanent staff of experienced employees. The Association is governed by a Council of Members, who represent plant-hire companies of all types and sizes throughout the country.

CPA is the UK's principal point of contact for all issues relating to use of construction plant. CPA works with government departments and agencies, local authorities, construction clients, private companies, other trade associations, and third-sector organisations. Through its extensive contacts, and with access to a range of industry experts and experience, CPA can help with resolution of issues including:

[1] Construction Skills Network Forecast 2017-2021

- Employee health and safety
- Machinery standards and emissions control
- Public safety and road transport
- Skills and employment

Aims and Objectives of the Research

The purpose of this research is to provide evidence to enable the industry to plan and ensure that plant operators will be available with the right skills, at the right time, in the right place. This evidence will allow for the planning and implementation of recruitment and upskilling programmes in order to address identified skills gaps or shortages.

Therefore the research will need to meet the following objectives:

- Analyse the existing data and develop consistent and comparable data for analysis
- Determine which qualifications and occupations are considered to be 'in scope'
- Identify the number of qualified operatives and those registered with a card scheme
- Identify the number of operatives without a competence card
- Gain an understanding of the flows into and out of the labour force
- Further exploration of the factors identified as potentially accounting for some of the discrepancy between the forecast figure and other available data
- Identify limiting factors
- Identify and quantify skills gaps or shortages (current and future)
- Quantify the potential for upskilling the existing workforce

Methodology

Fifty telephone interviews were completed with current members of the CPA between June and August 2017. A further 10 face to face and telephone interviews were completed with contractor companies to discuss plant operatives within their supply chain and 10 telephone interviews were completed with Training Providers delivering plant specific training and qualification assessment.

A sample frame was designed to ensure that the distribution of CPA member responses was representative of the total CPA membership. The 50 interviews achieved were broadly representative of the CPA membership by region and by turnover, the two main parameters on which CPA were able to segment their membership.

Telephone interviews were undertaken using a script developed in collaboration with CPA and CITB. Interviews typically took around 20-25 minutes to complete, depending on the size of the member organisation and the complexity of its workforce structure.

In addition, an online version of the survey was produced so that CPA members could self-complete if they chose to do so.

An initial introductory email was sent to all CPA members informing them of the purpose of the survey and offering the opportunity to complete the survey online. Two weeks after the initial email was sent, Skyblue began contacting members to complete the surveys over the telephone. Members were also given the opportunity to complete online at this stage if requested.

Skyblue was also advised by CPA that another survey of CPA members would also be taking place at the same time as the Supply and Demand survey. This was a much shorter, targeted survey enquiring about members views on CITB consensus. While there was not significant overlap or confusion between the two surveys, we did get a small number of CPA members indicating that they had already completed a survey. Even when explaining the differences between the two studies, most members still declined to take part.

CPA Conference Presentation

The key findings from the Supply and Demand research were presented to the CPA Conference on 31st October 2017. This provided an opportunity to thank those businesses participating in the study and to share the findings with the wider membership.

Discussions with members following the presentation highlighted the research findings that recruitment of skilled, qualified and experienced plant operators was a major challenge for the sector. Four businesses spoke to us following the presentation, each stating that they had experienced recruitment difficulties over recent months.

A particular issue raised by two of the members was in relation to experience. While potential plant operators may hold a CPCS card and qualifications, this did not necessarily relate to actual experience and the ability to competently and confidently operate the relevant straight away. Furthermore, these members both cited incidences where they had had experienced and competent operators who, for a variety of reasons, were not able to complete the necessary qualifications and assessments to allow them to continue operating. It was felt that with a small amount of additional support on the part of the training provider, such individuals would have been able to complete the training and assessment successfully.

Executive Summary

Key Findings from the CPA Member Survey

The detailed evidence contained in the full research report points to the key findings, including:

Business Confidence

Business Confidence amongst respondents is relatively high, with a quarter of members (24%) expecting their turnover to increase over the next 12 months. Only 5% of members anticipate a decrease in turnover. Furthermore, 64% of respondents indicated they felt there was about the right volume of work available to them while 12% indicated there was more work than they could take on.

Industry of operation

Based on our classification of industries[2], two thirds of respondents operate in plant-hire specific industry, while a third operate in what was classified as non-plant-hire specific.

Area of operation

Half of members responding to the survey indicated they operate either in their local area or within their region. Only 4% of respondents stated they operated outside of the UK.

Relationship with CITB

Nearly two thirds (62%) of all respondents indicated that they were registered with the CITB. Among those respondents registered with the CITB, 48% had a CITB training plan and 71% had claimed a CITB grant. The level of CITB grant claims is significantly higher amongst CPA members than CITB registered companies in general[3].

Occupations

Earth moving and cranes and lifting were the most common forms of plant that workers used. Around a third of employees within the member companies interviewed had a non-construction or plant-operation role.

Many respondents indicated that workers were expected to operate a number of different types of plant. 7% of workers were identified as having a role which required them to use plant but would not be described as a plant operative.

A more detailed analysis of occupations and the implications for the overall number of plant operators is contained in the next section.

Earth moving and cranes and lifting were also the most common areas were respondents were expecting to recruit over the coming 1 2months. 13% also expected to recruit construction staff who are not plant operatives but who use plant as part of their role.

[2] A detailed description of the SIC codes and their classification is given in Appendix B

[3] Based on data from the CITB Annual Report 2016

Workforce

From the study, the picture emerges of a relatively stable workforce[4]. More than four in ten (43%) construction plant workers are aged 45 and over. Conversely, fewer than one on ten (8%) are aged 24 or under[5].

64% of respondents indicated that they had no construction plant operatives leave their business within the last 12 months. The largest number of plant operatives leaving their employer during the previous 12 months were those employed to operate earth moving plant, which accounted for over 60% of all operatives leaving.

While there is a well-established employed workforce, 36% of respondents indicated that they have deployed plant operatives on a labour only basis over the last 12 months.

28% of respondents stated that they had had hard to fill vacancies over the previous 12 months across a range of different occupations and plant specialisms. Recruitment presented more of a challenge to respondents than training or retaining staff. 39% of members surveyed indicated recruitment was very of fairly difficult, compared to only 11% and 13% who found training and retaining staff a challenge.

The biggest barrier in relation to recruitment of plant operatives was the skills and knowledge of potential candidates. The next largest barrier was the experience of candidates, which was felt to be different to skills and knowledge.

Skills and Training

On the basis of this study, there would appear to be a well-trained, skilled and competent plant operative workforce amongst CPA members. 84% of respondents indicated that none of their construction plant operative employees had skills gaps. When asked to comment on the nature the skills gaps that did exist, respondents in the main commented on the skills needed by new employees and the skills required to secure competency cards.

When asked about qualifications of the workforce, the majority of respondents equated the holding of a CPCS (or other competence scheme) card with having a qualification. *As discussed in detail in the report, there is in fact a strong correlation between CPCS card holding and NVQ attainment.*

Half of the respondents indicated that no employees would achieve a qualification in the next 12 months.

The level of Apprenticeships being delivered by respondents is low, with over 80% stating they did not employ any apprentices currently. Of the remainder, the number of apprentices was typically between 1-4 per employer. Nine out of ten respondents did not expect to employ plant operations apprentices over the next 12 months.

The average number of days of off the job training undertaken by plant operatives was 3.9. Excluding the respondents who delivered no training, this average figure rises to 5 days. On average, the anticipated number of days of off-the-job training over the next 12 months was expected to rise.

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[4] A detailed breakdown of the age profile of respondent employees, the age profile of the construction sector and the overall workforce is general is provided on page 29

[5] It should be noted here that that legislation and HS&E practices prevent anyone under the age of 18 from operating plant on site. A breakdown of workforce by age is provided on page 20

CPCS and other competence schemes

Overall, the CPCS scheme is viewed positively amongst respondents, with nearly eight out of ten using the scheme. Over half of respondents (53%) stated that both they and their clients see the CPCS card scheme as vital to demonstrating competence. However, 22% don't use the CPCS scheme at all and a further 20% either use it because their clients require it, or because of regulation / habit.

Of the respondents using alternative competence schemes, most used these in conjunction with the CPCS and only 4% using it instead of the CPCS.

Key Findings from the Training Provider survey

- Half of training providers deliver training across a range of plant specialisms (Cranes, Earthmoving, General Plant, Material handling, Powered access, Small equipment and Lifting).
- All of the providers delivering training for a competence scheme also undertook accreditation. CPCS was the most common competence scheme with NPORS being almost as common.
- Only two providers offered apprenticeships in plant occupations. One provider offered a General Construction Apprenticeship.
- Part-time vocational qualifications are the most common to be studied. Only one provider had full-time students. All providers with part-time students expect this number to increase (75%) or stay the same (25%) over the next 12 months.
- Nine out of ten providers feel they have about the right amount of work for what they can offer. Half also indicated they could "always do with more work".
- Demand for training is inhibited by cost, an understanding of what providers offer and the value associated with training.
- Providers found it difficult to separate out the number of construction plant trainees studying full- and part-time across the various plant specialisms.
- Providers anticipated a greater increase in part-time learners compared to full-time and non-NVQ learners. Increases were expected across all plant specialisms.
- Providers tend to have a preferred method of delivery (on-site, training centre or employer premises. All forms of delivery were catered for across the provider network.
- Employer funded training was more common than self-funded, but self-funded still provided revenue for all but one provider.
- Trainees currently working in a plant operative role in construction was the most common type of learner.
- Seven of the ten providers indicated that the employers they worked with used CITB grant funding to support the cost of training.
- The average level of CITB funding across all providers was 33%.
- Eight of the ten providers indicated that the market conditions for construction plant operative training was 'About the right amount for what we can offer'. This was true for plant in general and for all types.
- Most providers did not feel there were major constraints/barriers to delivering plant operative training. Where constraints were identified, the most common were the costs of land / property to teach in and the recruitment and retention of good quality trainers and assessors.
- None of the training providers we spoke to had contacted an industry federation such as the CPA.
- Providers did not appear particularly hopeful / excited by the prospect of new technology in the industry. Only two providers felt they were well prepared to address future approaches.
- The availability of government funding was the single biggest factor in decision-making about training provision.
- Overall, providers did not feel that their provision had changed significantly over the last five years. Where there had been change, there was evidence of increased plant operative training and increased focus on Apprenticeships.

Key findings from the CITB's current evidence base relating to plant operatives

- There were significant volumes of Plant Operative training between 2008 and 2012
- Employment of Plant Operatives has been slowly increasing since 2010[6]
- There has been a drop in yearly qualification achievements for Plant Operatives, however recent quarterly achievement numbers and feedback on Registrations show a static position
- Plant Operatives have one of the highest numbers of qualification achievements
- There are four main areas for Plant Operative training qualifications (mainly Level 2 NVQ's):
    - Transporting loads (21% of training)
    - Excavating plant (18% of training)
    - Controlling lifting operations (14% of training)
    - Fork-lift trucks (12% of training)
- These four areas account for two-thirds of all plant operative training.
- They also identified several factors as possibly influencing the qualification levels for Plant Operatives:
    - There was a drive to convert trainees (on CPCS red cards) into skilled workers (CPCS blue cards); which meant achieving an NVQ
    - Government funding was available to support adult learners (Train2Gain)
    - Plant Operatives tend to qualify in more than one type of plant
    - Some of those training may be trades people using the plant to carry out their primary occupation e.g. Electricians.

In addition to this it is important to note the following points regarding construction training in general:

- There will be sometime between registration and achievements (for all occupations), however the data indicates that achievement numbers for 2016/17 will remain around the level seen in 2014/15. The pool of available workers to the sector is influenced by the unemployment claimant count, movement of construction workers to and from other sectors, and immigration.
- The pool of workers available from the unemployment claimant count has reduced substantially, movement of workers from other sectors into construction is increasing, and the pool of immigrants is relatively low.

[6] CITB CSN and ONS Labour Force Survey data

Conclusions and recommendations

Based on the key findings from the survey, we would draw out the following key conclusions:

- Attracting staff is the key problem for CPA members (2 in 5 firms)
- Retaining staff is the second workforce issue (for 1 in 8 firms)
- Training appears to be the lower order issue (1 in 9 with some difficulty)
- The level of Apprenticeship training in the sector is low, potentially reducing its attractiveness as a career option compared to other construction occupations with more well established apprenticeship programme
- Training provider engagement with the CPA and its members was low

With this in mind, we would urge CPA, their members and CITB to consider each issue above and ask:

- What is currently missing and what is not currently joining up to address the shortcomings?
- Is CPA ensuring strong coverage on platforms that promote careers and opportunities in the plant-hire sector, for example on the Go Construct site?
- Could a task and finish group led by CPA with members put more energy into a joined-up campaign without going off and doing their own thing?
- What opportunities are there for a new, sector developed apprenticeship programme that meets the needs of employers[7]?
- Is CPA effectively representing and communicating the needs of its members to training providers? This may be particularly important in relation to new technology, which does not appear to be high on the agendas of either the employers or training providers interviewed.

Promoting careers and opportunities

Go Construct

Go Construct is established as the ‘go-to’ information portal for careers in construction and the built environment. It provides:

- clear customer journeys for all types of new entrants through site
- an opportunity for:
    - visitors to identify study, apprenticeship and training routes to competence opportunities
    - visitors to identify workplace experience and opportunities to engage with employers
    - prospective entrants can see clearly how they can progress in the industry
- employers, schools and careers advisors with careers information resources that meet their needs

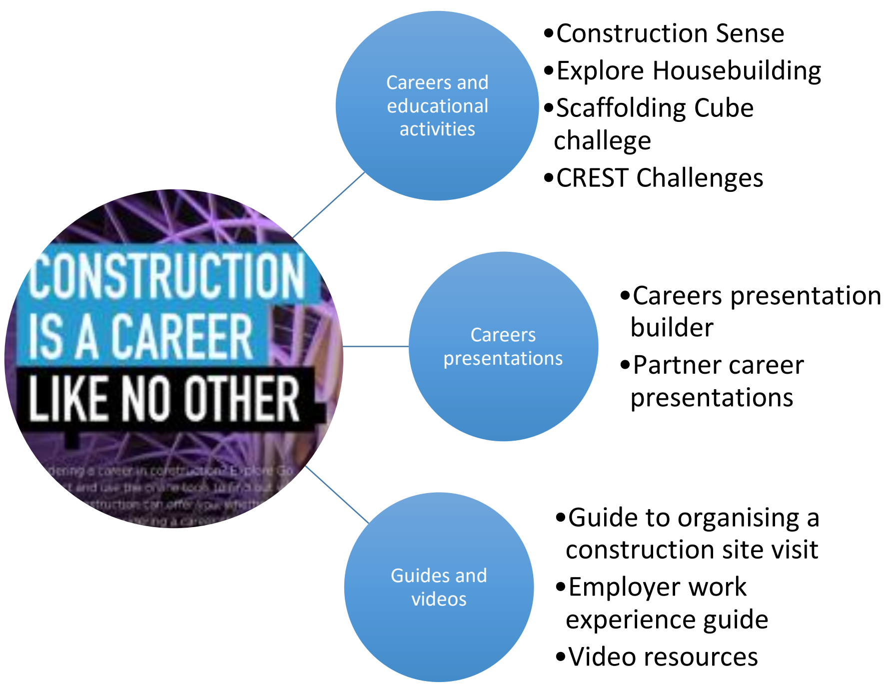
[7] We understand that discussions are already well advanced on the development of a new apprenticeship and would recommend that this work is continued

As a key strand in the CITB's promotion of construction sector career opportunities, a strong presence for plant operation on the site will help to raise the profile of plant operator careers. CITB plan to heavily promote Go Construct, so an effective presence here could reduce the need for more direct careers marketing by CPA.

Go Construct also provides access to the CITB's:

- Construction Ambassadors programme – support for existing and potential Ambassadors and those seeking an Ambassador to engage with
- Matching Service - Matching people looking for construction experiences with companies willing to provide them

CITB is also improving funding to employers, through a reformed grants scheme that invests in the most needed skills and makes it easier for companies of all sizes to access funding.



The Go Construct website provides a wealth of resources that can be used by individuals and organisations seeking to engage and inform local schools. The Matching Service could provide an efficient platform to engage with a wider range of schools. Resources on the site could be repurposed by the CPA and its members without the need for creation of new material. The Ambassador area provides help and guidance for sector Ambassadors to help them engage and work with schools for effectively.

CITB Funding Priorities

We would also recommend that CPA work closely with CITB to see if they could use any of the CITB future funding priorities to help CPA address the issues outlined above. The CITB grants scheme will cover the following area sof training from April 2018:

1. Apprenticeships
2. Qualifications
3. Short courses that are industry valued and fit with CITB's plans for a national training register which has agreed courses on it only

CITB commissioned funding is intended to address a number of specific priorities for skills and training and any further applications for CITB funding should clearly address at least one of these priorities:

- Reducing skills gaps
- Reducing skills shortages
- Increasing access to the right training
- **Increasing the appeal of working in construction**
- Increasing training expenditure
- Increasing the added value per employee

Given that training would not appear to be a significant issue for CPA members, 'Increasing the appeal of working in construction' would appear the most relevant priority to base future application around:

- **Increasing the appeal of working in construction**
  This involves promoting the benefits of working in the construction industry to people choosing a career as well as people who guide others in their career choices.

Engaging with School Careers Advisors

Recent work for the CITB by Skyblue explored how the construction sector can most effectively engage with schools. Among the most effective school engagement encounters with industry were:

- Sector ambassadors presenting to young people as part of careers lessons or school assemblies
- Work experience placements
- Skills Competitions

While we appreciate 'hands on' work experience placements may prove difficult to implement, exposure to construction plant operations may prove attractive for young people.

A recent report by CITB into virtual and immersive learning[8] may offer opportunities for providing young people with plant operation experience without the associated health and safety constraints.

An approach adopted by several sectors and organisations is to focus careers activity in those areas where there is likely to be high demand. For example, CPA may consider focussing careers activity in areas where there is known major infrastructure construction. There may also be benefit to be gained

[8] http://www.citb.co.uk/news-events/uk/2017/citb-immersive-learning-report/

by closer working with major developers delivering these projects, potentially through the adoption of more collaborative working practices encouraged through BIM.

Through discussion as part of this project, the CPA has expressed ambitions around helping its members to become sector ambassadors. The Association has 1,600 valuable potential ambassadors who have children of their own in local schools. Evidence from careers engagement research demonstrates that encounters with real employers has a significant impact on young people's career decisions and that they make a far better and stronger case when allowed to directly engage with learners. This is especially true when the learning is of an experiential nature, with young people having the opportunity to physically interact with equipment, materials, etc. as part of the careers encounter.

Skills Competitions

Skills Competitions are generally regarded as an effective way of promoting specific sectors / occupations, while also helping to improve training standards. If not already being delivered, we would encourage CPA to consider if this might be an appropriate channel to demonstrate the sector. The Worlds Skills UK team is competing in the World Skills competition this summer, with construction trades making up around one third of all competitors.

As we understand it, there are currently no skills competitions for plant operation. The CPA has, in the past, considered introducing this as part of its Awards scheme for plant mechanics – Star of the Future – but this has always proved too difficult to put into practice. With the increase in simulation technologies as part of the standard training provision being introduced for many occupations across the construction sector, this is an idea that may benefit from further reinvestigation.

Further research opportunities

As the first study of this kind with CPA member organisations, it was recognised that the research may help to identify areas where additional evidence may be required to address specific issues within the sector. When identified in the main report, these opportunities for additional research have been discussed further. Below is a summary of the main areas we feel would benefit from additional investigation in order to provide CPA with an even stronger evidence base on which to make informed strategic decisions on behalf of its members:

Age profile of the plant operative workforce

While this study provides some useful evidence on the overall age profile of the workforce at the current time, it did not explore CPA members wider opinions on the age profile of the workforce, especially the requirement or otherwise of young entrants to the sector, or the retention of older, more experienced workers.

CITB membership

During the research it was suggested that a study which specifically compares CITB registrations against CPA membership could provide useful additional insight into this question, although the practicalities of doing so have not been fully explored. With upcoming changes to the CITB grant scheme, in particular the removal of the Training Plan grant aid, it may be of interest to the CPA to understand the impact of this on members.

Overall plant operative numbers

One way to provide a very simple and regular update on the number of construction plant operatives would be to have a very small annual 'return' which members are invited to complete. This could be a shortened version of the staff breakdown used in this study, which asks members to provide an estimate of numbers of operatives across key plant types and the number of labour-only contractors used.

Plant operator workforce

Plant operators are a critical resource in a wide range of construction projects; from residential homebuilding through to major infrastructure. However, there is no clear, single figure for the number of construction plant operators and various data sources provide figures ranging from c. 40,000 through to c. 180,000. Understanding these figures and why they differ provides some insight into what a 'true' figure (or range of figures) for the volume of construction plant operators might be.

Understanding the volume of plant operator employment and how this may change over time is essential if the sector is to be able to respond to these changes by providing the required numbers of skilled and competent workers.

One of the key outputs from the study was to gain greater clarity over the number of plant operatives / plant users employed both within and outside of the construction sector. Analysis of the findings from the survey, together with evidence collected as part of the initial literature review, allows us to make estimates on the likely numbers of plant operatives.

It should be noted that these estimates are based on a series of (clearly stated) assumptions and while providing an indication of the potential numbers of the construction plant operatives, it is based on a relatively small number of responses. Furthermore, a sample of 50 respondents from a population of 1599 results in a sampling error of 14% at the 95% confidence level. This means that any given response could vary by +/- 14% from that given.

Currently available data

As outlined in the literature review paper which accompanies this report, there are a range of different figures from different sources used to identify the number of construction plant operatives:

- **185,564** - Plant operatives - all sectors: Labour Force Survey, Dec 2016
- **171,869** - All CPCS card holders, March 2017
- **73,975** – Labour Force Survey in CITB Employment in Construction, Dec 2016
- **48,468** – CITB estimates in CITB Employment in Construction 2016
- **39,580** - CSN: Industry Insights Forecasts 2017-2021
- **37,619** - Plant operatives – construction, Labour Force Survey, Dec 2016

A number of possible explanations for this variation in numbers have been posited[9], key amongst these is the recognition that many occupations will require the use of plant without the user necessarily identifying themselves as a plant operator. From the CPA member survey, 7% of the respondent workforce were described as non-plant specialists who use plant as part of their role. Plant operatives made up 52% of the workforce. The remainder were non-plant users.

Occupations in scope

The range of occupations deemed to be 'in scope' for plant operatives will also account for a degree of the variation observed. Analysis of construction plant operative occupations typically uses the following four SOC codes:

Plant and Machine Operatives

8129 Plant and machine operatives n.e.c.

Mobile Machine Drivers and Operatives

8221 Crane drivers

8222 Fork-lift truck drivers

8229 Mobile machine drivers and operatives n.e.c.

However, an estimate of plant operatives in CITB Employment in Construction 2016 employs a broader range of SOC codes to describe the occupation. Consideration of these shows that many are likely to fall outside of an accepted definition of the plant operative role, e.g. vehicle technicians, mechanics and electricians, Metal working production and maintenance fitters. The implication of this is that CITB figures may overestimate the number of plant operatives.

Estimations of plant operative numbers from the CPA Member Survey

The total size of the plant operator workforce amongst those members surveyed was 9,038. This includes 604 (7%) who were classed as "Other construction staff who are not plant specialists but may use plant as part of their wider role".

Assuming the sample surveyed was representative of the wider membership, this would indicate a total plant operator workforce of c. 289,000. Of these around 19,000 would be construction workers who use plant as part of their role.

The sample of 50 members achieved in this study gives a sampling error of 14% at the 95% confidence level. This gives us a plant operator workforce of between 248,540 and 329,460[10].

[9] The Literature Review report which supports this research explains this variation in more detail.
[10] Given the relatively large sampling error level, we would urge caution attaching too much significance to this figure.

While it is difficult to quantify precisely, there was a feeling amongst the research team that, when discussing employee numbers with respondents, the larger the business got, there more 'approximate' the number of employees became. For smaller businesses, there was generally a high level of confidence on the number of employees provided. However, as the businesses size increased, unless the respondent had access to the specific data, the number of employees given had less confidence attached to it.

Literature review: Employment by context

The following table shows how the numbers of plant operatives varies by context:[11]

	% of plant operatives
Housebuild and new build	19.5
Housebuild and repair and maintenance companies	0.5
Non-residential and new build companies	8.6
Non-residential and repair and maintenance companies	2.9
Engineering and new build companies	34.6
Civil engineering and repair and maintenance companies	33.9

Literature review: Employment by gender

CITB Employment in Construction 2016 reveals that 2% of construction plant operatives are women. Across all manual occupation, this figure is 0.8% suggesting that plant operation is amongst the more attractive construction occupations for women.

Diversity in the workforce was not considered specifically as part of this project. However, given that plant operation appears to be a more attractive option for female workers than many other construction occupations, this may suggest that a more targeted education engagement programme that directly encourages young women to consider plant operation (as an already more diverse workforce) could help to address the recruitment need of employers.

CPCS Transfer Process

The Construction Plant Competence Scheme is the primary construction plant competence scheme in the UK, with over 170,000 current members.

There are two levels of CPCS Card; a Red (Trained) card and a Blue (Competent) card. The Blue card is the higher level card and competence is primarily demonstrated through the achievement of a relevant

[11] CITB Employment in Construction 2016

NVQ. This is useful to help understand the level of qualification and investment in training, development and assessment across construction plant operatives.

However, it should be noted that not all CPCS Blue Card holders have an NVQ. When the CPCS was introduced in 2003, a process was agreed for card holders who ‘transferred in’ from existing competence schemes, for example NPORS. There was no requirement for these existing scheme card holders to achieve a relevant NVQ. Data from CPA indicated that the proportion of current CPCS Blue Card holders with this ‘transferred in’ status is around 20%-25%.

Furthermore, the Blue CPCS card requires proof of competence, not necessarily training. So, competent, trained operators can achieve their Blue card through assessment alone, without the need for training.

Construction Skills Network Forecasts 2018-2022

As this report was being finalised, the latest forecast data from the CSN for the period 2018-2022 was published. While we have seen that the CSN data is likely to underestimate the total number of plant operatives, the latest forecast data does still indicate a small continued growth in demand for plant operatives over the next 4 years, despite a slight decline in overall UK construction employment growth. The annual recruitment requirement (ARR) for plant operatives between 2018 and 2022 is 740.

Construction Plant Operator Supply and Demand Member Survey

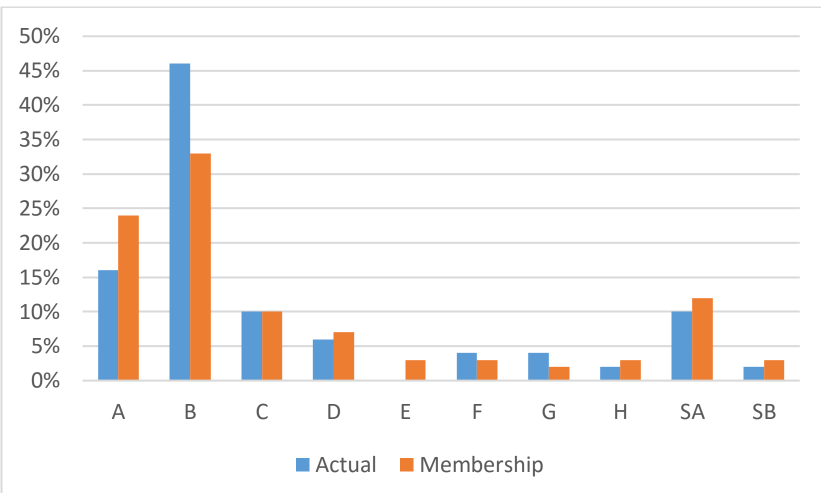
Main Findings

*Please note: Not all respondents answered all questions. This may be due to filtering based on a previous question or respondents just not providing a response. The **n** number underneath each table / chart indicates the number of responses on which the analysis is based.*

Characteristics of respondents

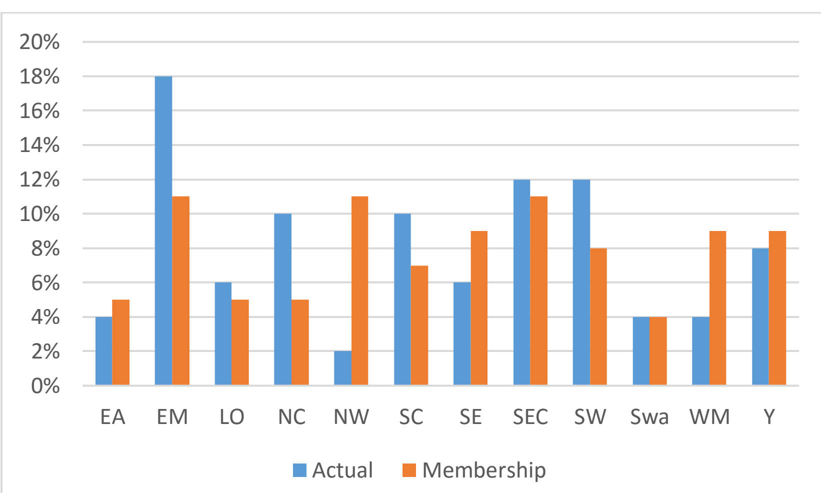
CPA subscription band

The sample achieved broadly reflects the overall membership of the CPA. A description of the CPA subscription bands is given in Appendix B.



n=50

CPA region

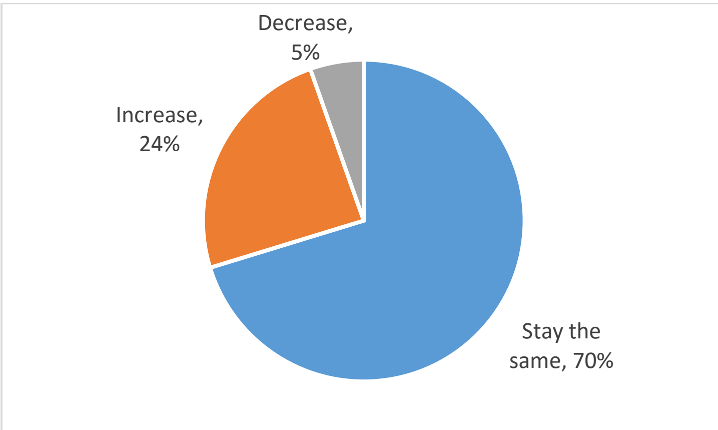


n=50

Business Turnover

The total turnover of the respondents to the member survey was in excess of £1bn. The average turnover across those companies who provided a figure was around £28,500,000

The majority of respondents expect their business turnover to remain the same over the next 12 months. Nearly a quarter (24%) anticipate an increase in turnover, over the same period.



n=37

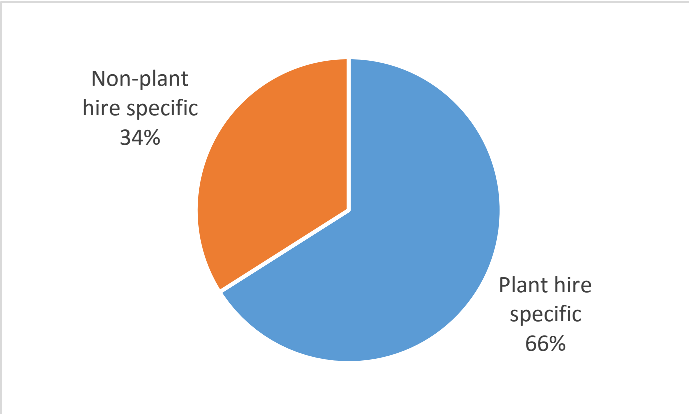
Size variations

There do not appear to be any significant variations in expected increase in turnover by current value of turnover. Large employers were the most likely to expect an increase in turnover over the next 12 months, while small companies where the only ones expecting to see a decrease in turnover.

Classifying industry of operation

Each respondent was asked to classify themselves by their main industry of operation. While many could provide a broad description, very few could identify their relevant Standard Industry Classification (SIC) code. Cross checking with Companies House records allowed us to identify the main SIC code of operation for each respondent. These were then classified to identify if the main are of the business of the respondent was plant hire specific. Two thirds of respondents (66%) were classified as plant-specific.[12]

[12] A more detailed breakdown of SIC code of operation is included as Appendix A.



n=50

To begin to understand the variation in the estimates of the plant operator workforce attributable to industry classification, we can consider the industries of occupation of those businesses providing data. For example:

SIC Code	Included in CSN	% of respondents
33.1		2%
33.2		2%
35.2		2%
41.1	Yes	2%
42.2	Yes	
42.9	Yes	8%
43.1	Yes	6%
43.3	Yes	2%
43.9	Yes	28%
46.6		2%
49.4		2%
68.2		2%
71.1	Yes	
77.3		38%

On the basis of the above, it can be seen that CSN estimates of plant operative numbers would not include around half of the CPA member companies. Based on the numbers of employees given by respondents to this survey, this equates to around 60% of all plant operatives. Therefore, we can be certain that the CSN figure of 39,580 plant operatives significantly underestimates the total number of operatives across all sectors.

This same difference in SIC code usage would apply to the CITB Survey of Employment by Occupation in the Construction Industry 2016, which estimated that there were 48,468 construction plant operatives.

Membership of federations and associations

Membership of trade federations other than the CPA was very low amongst the members surveyed.

Association	Number	Percentage
Construction Plant-hire Association (CPA)	50	100%
National Federation of Demolition Contractors (NFDC)	2	4%
Civil Engineering Contractors Association (CECA)	1	2%
International Powered Access Federation (IPAF)	1	2%
Federation of Small Business (FSB)	2	4%
Rail Plant Association (RPA)	2	4%
Road Haulage Association (RHA)	2	4%
Freight Transport Association (FTA)	2	4%

n=50

A number of other federations and associations were also mentioned[13]:

- AVETTA
- CIP
- Hire Association Europe
- PASMA
- Rail Alliance

A number of Health and Safety and similar related associations where also referenced, due to the fact that on-site safety has to be often out-sourced or accredited by bodies such as:

- CHAS
- Construction Line
- Fleet Operator Recognition Scheme (FORS)
- SIRIUS
- Worksafe

[13] A full list of all federations mentioned is provided in Appendix D.

Relationship with CITB

Nearly two thirds (62%) of all respondents indicated that they were registered with the CITB. Among those respondents registered with the CITB, 71% had claimed a CITB grant.

Of those respondents registered with the CITB, just under half (48%) have a training plan. Only two respondents who have a training plan indicated they had not claimed a CITB grant.

	Percentage
Are you registered with CITB?	62%
Have you claimed CITB grant? (CITB registered)	71%
Do you have a CITB Training Plan? (CITB registered)	48%

n=varies

No definitive list of the number of CPA members registered with the CITB exits, so it is impossible to say to what extent the achieved sample is representative of the whole membership in this regards. However, while slightly higher than the proportion found in some other studies and data from CITB, which vary from around 50-60%, the 62% is of the same order of magnitude, especially when considered in light of the sampling error for the study.

It has been suggested that a study which specifically compares CITB registrations against CPA membership could provide useful additional insight into this question, although the practicalities of doing so have not been fully explored.

According to the CITB Annual Report and Accounts 2016, 16,101 employers received a training grant in 2016 out of a total number of Levy and Grant registered employers of 69,812. This equates to 23% of registered and levy paying employers, significantly lower than the 71% of CPA respondents claiming a CITB grant.

Regional variations

There was a small degree of regional variation in CITB membership, with respondents in the North most likely to be CITB members. Wales and the Midlands had the lowest levels of CITB registration.

Similarly, respondents in the North were more likely that other areas to have received a CITB grant. Those in the South were the least likely to have received funding.

Despite having the highest levels of CITB registration and grant claims, respondents in the North were the least likely to have a CITB training plan. All respondents in London and Wales had a training plan.

Size variations

Micro-sized business - those employing fewer than 10 people - are the least likely to be registered with CITB.

Plant sector variations

CITB registration varied significantly between plant-specific CPA respondents and non-plant specific, with plant-specific respondents more likely to be CITB registered.

Changes to the CITB Training Grant

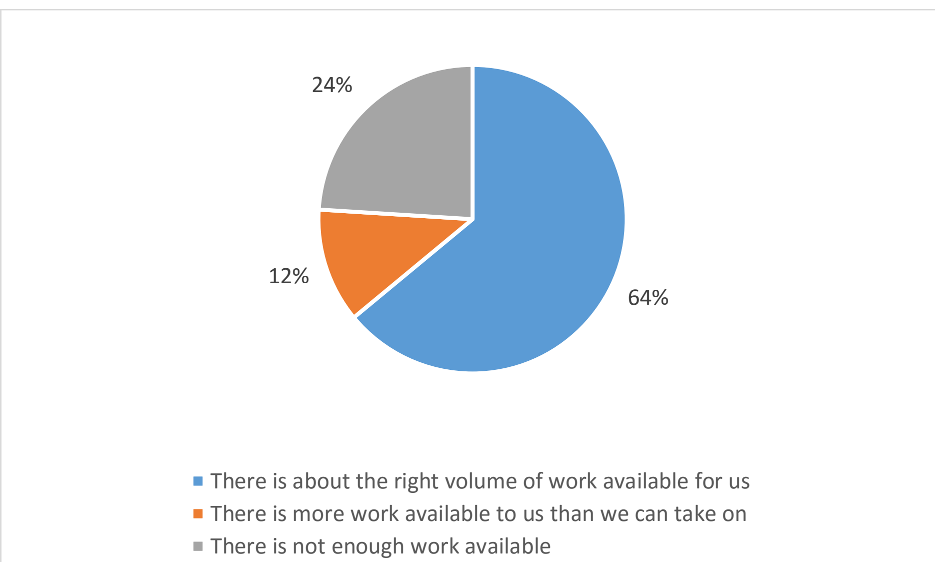
The above findings would suggest that there is not necessarily a strong link between CITB registration, CITB grant claims and the CPA member having a CITB Training Plan, i.e. many members claim CITB grant without having a CITB Training Plan. Conversely, very few members with Training Plans do not claim grant. The CITB Training Plan grant currently supports any training that is relevant to a business and not supported by one of the other grants (Apprenticeship Grants, CPCS Grant, etc.) This includes bite-sized training sessions, such as toolbox talks. The Training Plan route enables an employer to put a number of different elements of training into a single package. Provided the Training Plan overall shows a planned approach to training and development it received grant aid.

However, CITB have stated that Training Plan grant aid will cease from April 2018[14]. This has a potentially significant impact on CPA members as an internal survey in 2017 revealed that approximately half of their members use Training Plans to secure grant aid. The 48% of respondents with a Training Plan in this study corresponds to the findings of this earlier member survey.

The change to the CITB Grant process reinforces the need for CPA members to be supported in securing CITB training grant aid in a way that is as good as / equivalent to the Training Plan mechanism.

Current market conditions

The majority of respondents (64%) indicated they felt 'There is about the right volume of work available for us'. However, a quarter of respondents (24%) felt there was not enough work available.



n=50

This broadly optimistic view of the volume of work available is interesting to note, especially in light of recent reports suggesting that growth in the construction industry is currently at relatively low levels:

[14] http://www.citb.co.uk/grant/update-grant-reform/whats-changing/

New orders in the construction industry have fallen at their fastest quarterly rate for three years, according to the Office for National Statistics. Orders declined 7.8 per cent in Q2 compared with Q1, with the largest falls coming in two sectors: infrastructure (-16.2 per cent) and private commercial (-15.6 per cent). This represented the fastest quarter-on-quarter fall in new orders since Q1 2014, when they also fell by 7.8 per cent. In addition, data from the latest Markit / CIPS Construction PMI showed growth in the construction industry hit its lowest level for 12 months in August. The PMI suggested a lack of new orders had hit activity in August, with a particular slowdown in commercial hitting construction work. The Markit / CIPS PMI hit 51.1 in August, down from 51.9 in July – only slightly ahead of the 50.0 'no change' level. However, we also observe that the Civils / Infrastructure sector is much more positive with major infrastructure projects such as HS2, Hinckley Point C and many major highways / engineering projects going forward. Home building is also growing. All these project areas have more need for plant operators and may be influencing the overall positive view of plant-hire companies.

Regional variations

Respondents in the South and the Midlands were the most likely to feel there was the "right amount of work" currently available. All of the respondents in Wales indicated there was not enough work. Respondents in the North were the most likely to feel there was currently more available than they could handle.

Size variations

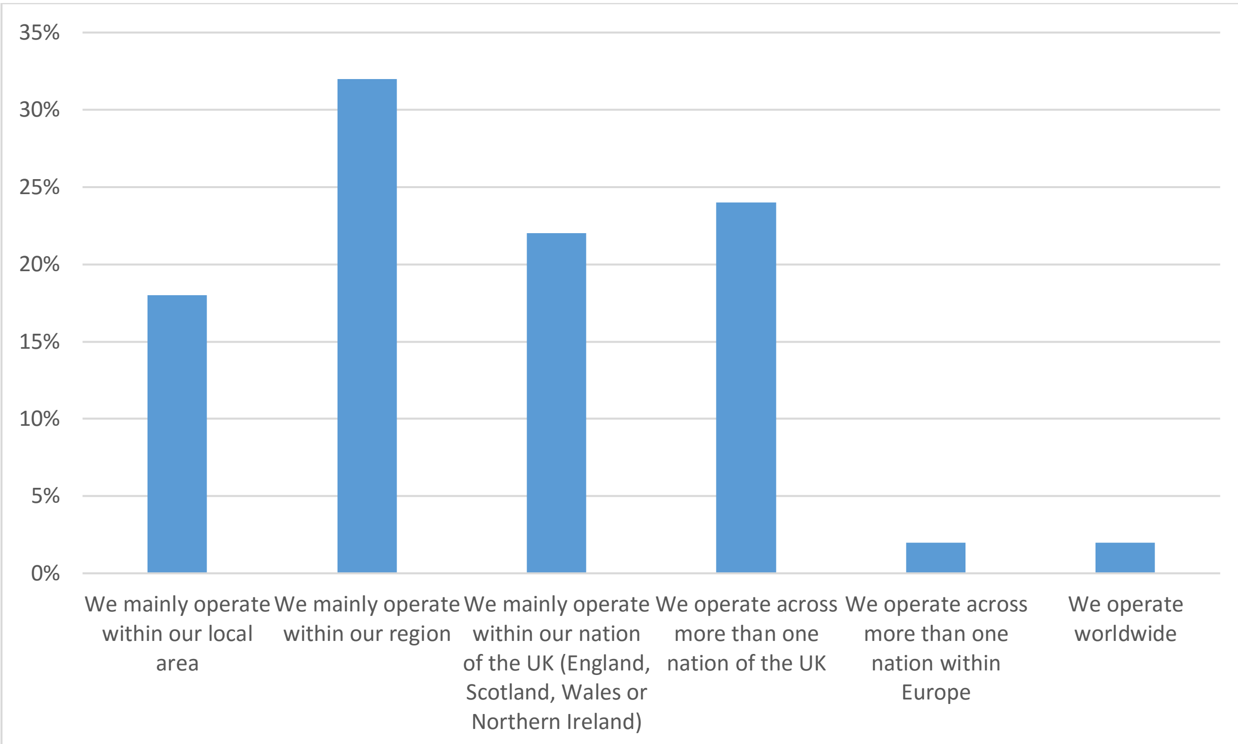
Small respondent organisations were the most likely to indicate that they felt there was more available than they could take on. Medium sized businesses were most likely to feel there was not enough work.

Plant specific variations

Plant-specific CPA respondents were a little more likely to say there was more work they could handle, while non-plant specific respondents were more likely to feel there was the right amount of work available.

Geography of operation

A third of respondents (32%) operate primarily within the region where they are based. A further 22% operate within their nation of the UK, while 24% operate across more than one nation of the UK. Only 4% of respondents operate outside the UK.



n=50

Regional variations

Respondents based in Wales and London were the most likely to operate only within their local area, while the South had the only respondent who operated across more than one nation in Europe. Respondents in the Midlands and the North were more likely than most to operate across more than one nation of the UK. The North had the only respondent to operate worldwide.

Size variations

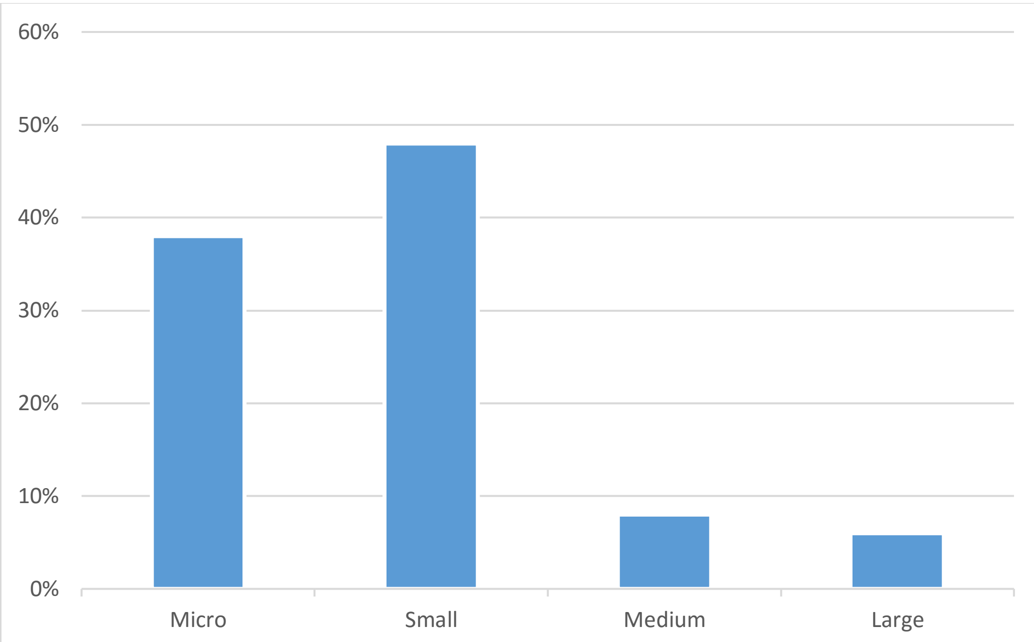
The smaller the respondent organisation, the more likely they are to operate in a more tightly defined geographic area. Micro and small businesses were the only respondents to operate only in their local area. A large organisation was the only one to operate at a worldwide level.

Workforce

Current employment

For ease of analysis, the number of employees within the business was used to match respondents against the standard business sizes: Micro (1-9), Small (10-49), Medium (50-249) and Large (250+).

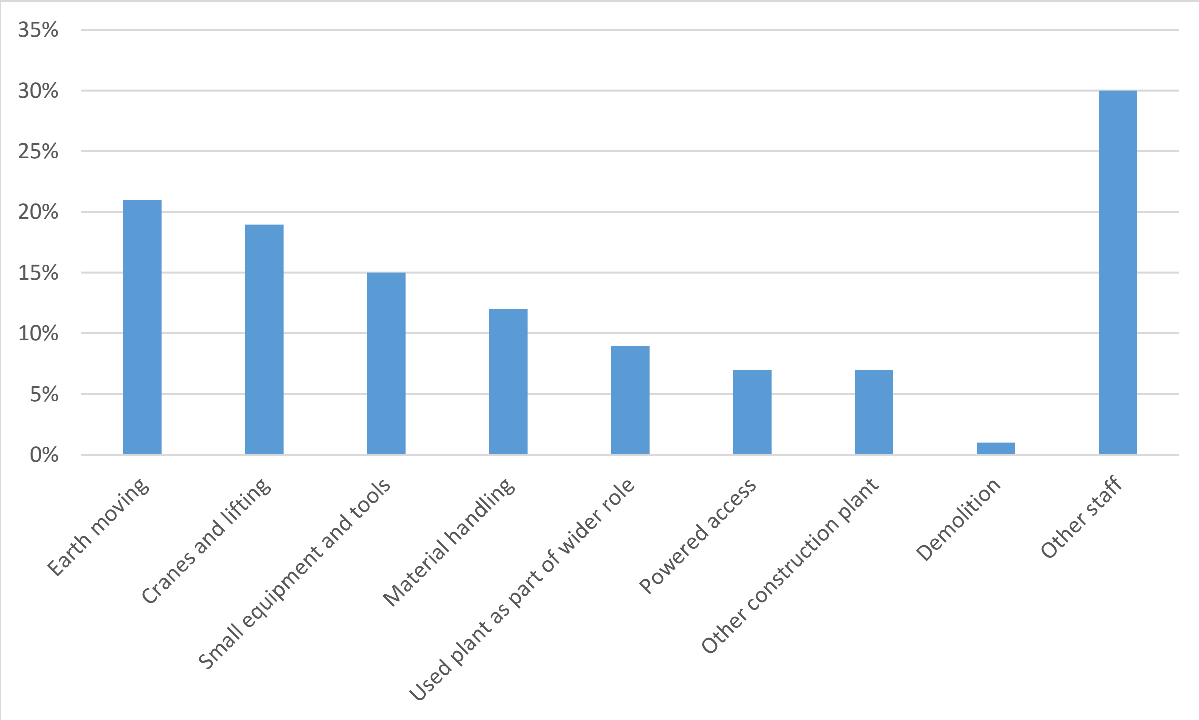
As the sample was specifically designed to reflect the make-up of the CPA membership (by turnover), the majority of respondents were smaller businesses.



n=50

Breakdown of staff by main role

Respondents employ staff across a range of plant specific and non-plant specific occupations, with earth moving (21%), cranes and lifting (19%) and small equipment and tools (15%) being the most common plant specific job roles.



n=50

Other construction plant staff specialisms

- Railway vehicles and trailer operators
- Road plaining operators
- Milling machine operators
- Road sweeper and tipper operators

Non-plant specialists who use plant as part of their wider role

The key job roles identified where non-plant operatives use plant as part of their role were:

- Office based staff – Directors / Managers / Administrators
- Fabricators
- Fitters
- Low loader driver
- Lorry drivers
- Steel fixers and shuttering joiners
- Truck drivers (primarily lifting plant)
- Workshop fitters

It is interesting to note that, while a number of the members surveyed were general construction companies, none identified construction trade staff (roofers, etc.) as plant users. This is at odds with some of the initial assumptions discussed in the literature review, which posited that those working in construction trades may be key users of plant. For a number of respondents, especially smaller companies, there was an expectation that most (if not all) members of staff would be expected to operate plant equipment if called on to do so. This finding should also be considered in light of the fact that many general construction projects employ large supply chain numbers to carry out specialist operations such as roofing, bricklaying etc., and therefore will not have data or specific knowledge of the plant skills in those workforces. This is best demonstrated in the contractor survey findings outlined on page 56 of this report.

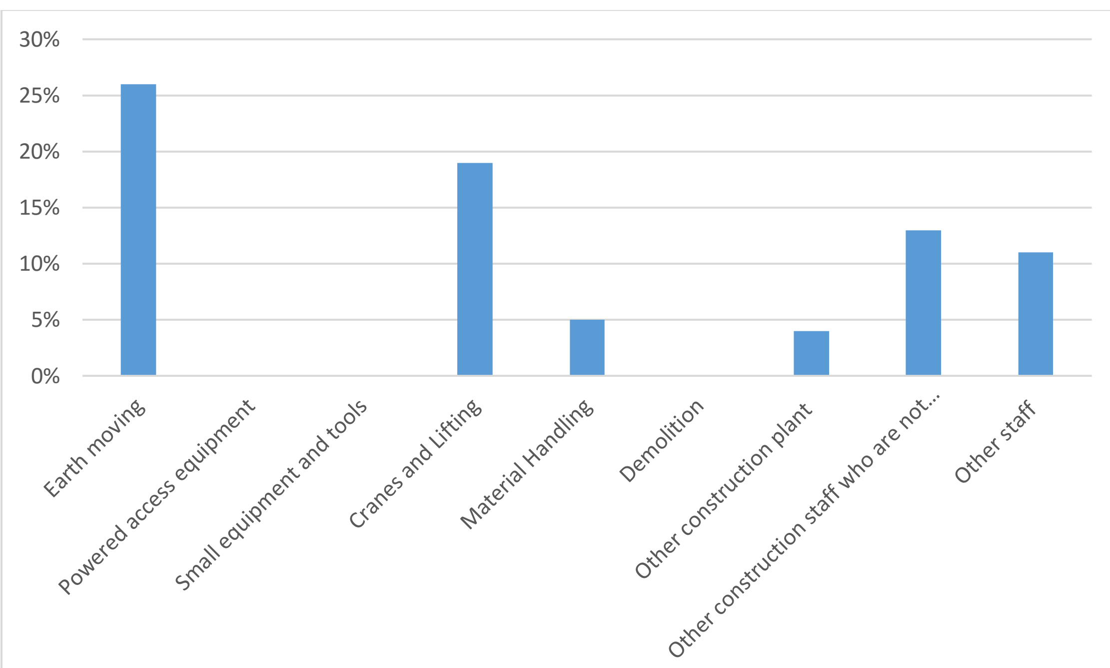
Employment intention over the next 12 months

Within the construction plant occupations, the most common areas for recruitment over the coming 12 months are:

- Earth moving (26%)
- Cranes and lifting (19%)
- Material handling (5%)

Of those responding to the question, 13% also expected to recruit construction staff who are not plant operatives but who use plant as part of their role.

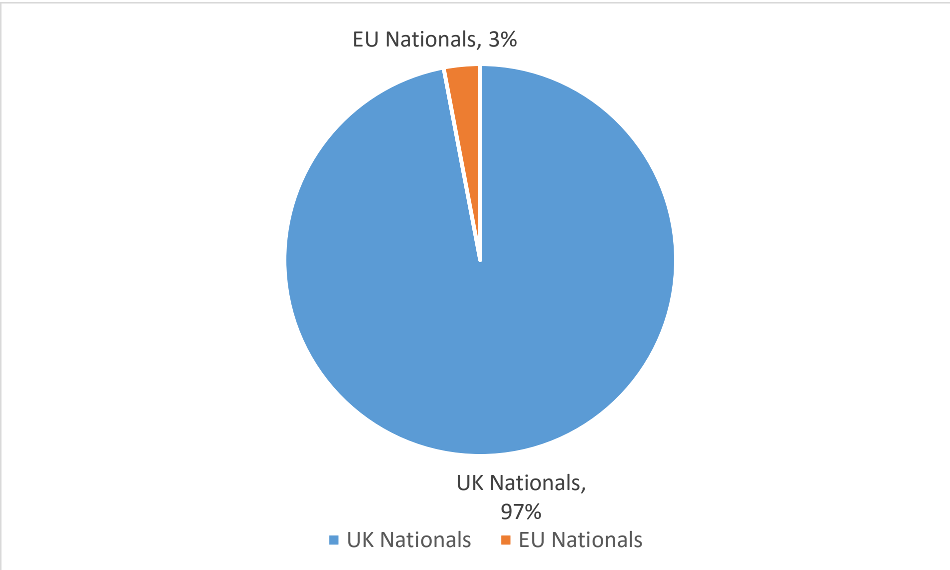
Where respondents do intend to recruit new staff over the next 12 months the average number of new staff was between 1 and 2.



n=varies

Country of origin of workforce

The employment of non-UK nationals was relatively low across CPA respondents, with only 3% of workers described as non-UK nationals.



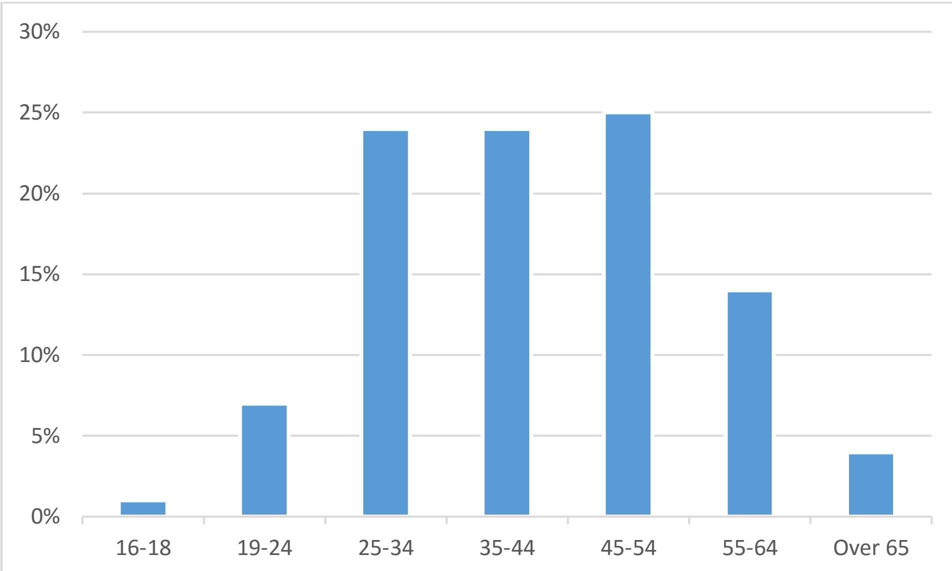
n=46

The employment of non-UK nationals in the construction plant workforce would appear to be significantly lower than that for the construction industry overall. In its latest quarterly survey of the industry, conducted during the final three months of 2016, the Royal Institution of Chartered Surveyors (Rics) report that the UK construction industry could lose more than 8% of the sector's workforce if the country does not retain access to the European single market after Brexit. Furthermore, a recent CITB study[15] found that of non-UK workers in construction 5% were working as plant and machine operatives. In addition, it should be noted that CPCS training and testing is wholly in English. Therefore, this will limit those who do not have good knowledge of the English language in taking up the training / assessment to secure the required competency card for may sites.

[15] Migration and Construction: The view from employers, recruiters and non-UK workers, CITB June 2017

Age of workforce

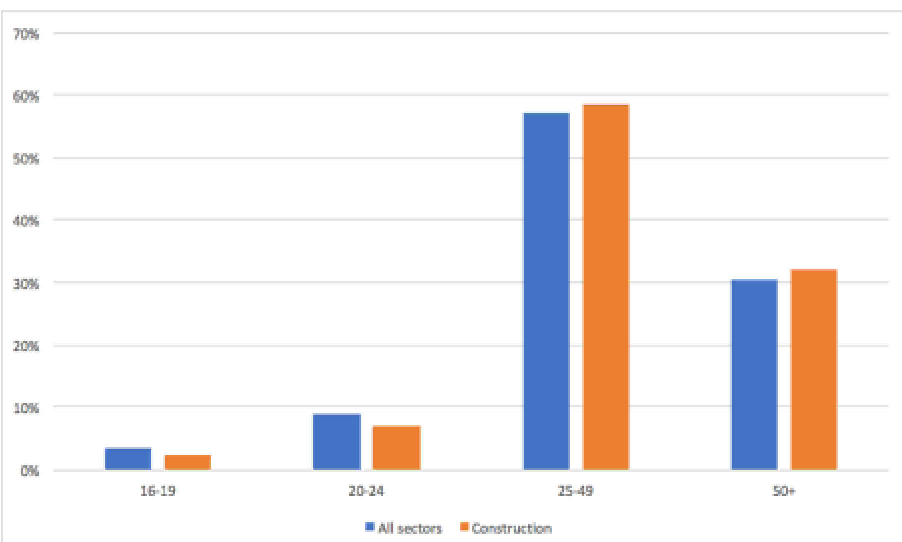
While a number of respondents struggled to provide a detailed breakdown of their construction plant workforce by age, where this data was available, the following picture is found:



n=43

Anecdotal evidence from both this research and more general industry feedback would suggest that a number of employers perceive their workforce to be aging, with some examples provided of workers who had been with their employer for 30 years or more. However, the data from this study, while showing that 18% of workers are 55 or older, there does not appear to be evidence of a significantly older workforce than the population as a whole.

Comparison of construction sector employment to all employment[16]



[16] Labour Force Survey, January- March 2017

Inflows to the sector

The data around the age of the workforce suggests that there are fewer young people in the construction sector than the economy as a whole. It is difficult to draw a direct comparison with evidence from this study, but taken with anecdotal evidence feedback from plant-hire sector employers there is potentially a shortage of inflow of new young people to the sector, which would be worth further investigation to understand the potential impact on plant operatives in the longer term.

Again, anecdotally is has been suggested by CPA members and others that unlike some other occupations within construction (joiners, bricklayers, etc.) there may be good reasons for employers to avoid recruiting very young plant operators, due to potentially higher accident rates. Employers would prefer to recruit slightly more mature plant operators and consequently the relatively low numbers of young plant operatives may not be perceived as a problem. This does have potential implications for longer term plant operative numbers though as fewer operatives will be available to progress into the role – this places a greater requirement on employers to recruit plant operatives straight into the role.

There was a small amount of evidence of poor perceptions of younger workers from this study, but nothing on a scale to suggest this is a sector wide issue.

Literature review: Previous work in other areas

The Literature Review considers the career trajectories of those working as plant operatives. For employees currently working in plant/ machine operation that had previously worked in other areas, the highest proportion of these (67%) had previously worked as a labourer/ general operative. The Literature Review evidence goes some way to supporting the anecdotal evidence above, that those moving into plant operation tend not to do so directly.

What this study shows is, that for more detailed strategic planning of plant operative recruitment and development more data is required. It is recognised that this is the first time a research study of this nature has been carried out for the sector and while it cannot provide answers to all of the sectors questions, it can identify areas for further valuable study. While there is a small amount of research and anecdotal evidence, there is no clear picture about the volume and potential impact on recruitment and career progression for plant operatives. If the CPA is looking to undertake additional research, we would suggest the age profile of the sector is an area that could usefully be explored further.

Deployment of labour only sub-contract plant operatives

Just over one third (36%) of respondents indicated that they have deployed plant operatives on a labour only basis over the last 12 months.

Overall, approximately 120 sub-contracted plant operatives were employed, an average of 7 operatives per respondent. However, the distribution was more varied, with four respondents employing 20 or more sub-contracted plant operatives.

Size variations

Both micro- and large businesses were more likely than the average to have deployed plant operatives on a labour only sub-contract basis.

Plant-specific variations

There were small differences between plant specific and non-plant specific respondents with regards to this question, with non-plant specific respondents indicating higher levels of subcontracted labour, as may have been expected.

Skills gaps

a) Construction Plant Operatives

The majority of respondents (84%) indicated that none of their construction plant operative employees had skills gaps. Of the eight respondents with skills gaps, the total number of plant operatives was 72. When asked to comment on the nature these skills gaps, respondents in the main commented the skills were those needed by new employees and those requiring competency cards. The respondent with the largest skills gaps (30 plant operatives) indicated the required skills were primarily technical and legislative knowledge required of new supervisors.

b) All other staff

Fewer respondents reported skills gaps amongst their non-plant operative staff than their operatives, with only four respondents indicting this group of employees had skills gaps. Specifically, the skills gaps where given as:

- NEBOSH
- Payroll
- Product knowledge

The findings from the primary research largely support that from the CITB's Skills Needs of Specialists in Construction report, which also found few strong examples of skills needs in relation to plant operatives. However, the picture with regards to skills shortages can change quickly and may vary significantly regionally. For example, a recent study by CITB for the Greater London Authority[17] found that this year there will be £9.6bn of construction spend on new housing projects, £9.3bn on private commercial projects, £5.7bn on public non-housing projects and £5.4bn on infrastructure. Furthermore, there are 4,134 projects in Greater London's pipeline representing a total construction spend of £55.6bn – £35.8bn of which is located in the centre of the capital. However, the report also identifies major skills shortages in the capital, with several occupations both in high demand and facing a sizeable gap in available labour, including bricklayers, surveyors, civil engineers and plant operatives.

[17] https://www.constructionnews.co.uk/analysis/expert-opinion/are-the-views-out-of-londons-windows-about-to-change/10021658.article

Similarly, the £4bn Thames Tideway Tunnel is one of the largest scheduled water industry projects which will require a wide range of multi-disciplined talent to bring it to completion. Labour forecasting shows that there are around 223 different roles required on the project. Of those that will be in most demand and where there is a skills shortages, construction features heavily, with trade supervisors, plant operatives, mechanics, fitters and civil engineering being key[18].

The Literature Review found little evidence of significant skills gaps in the plant operative workforce.

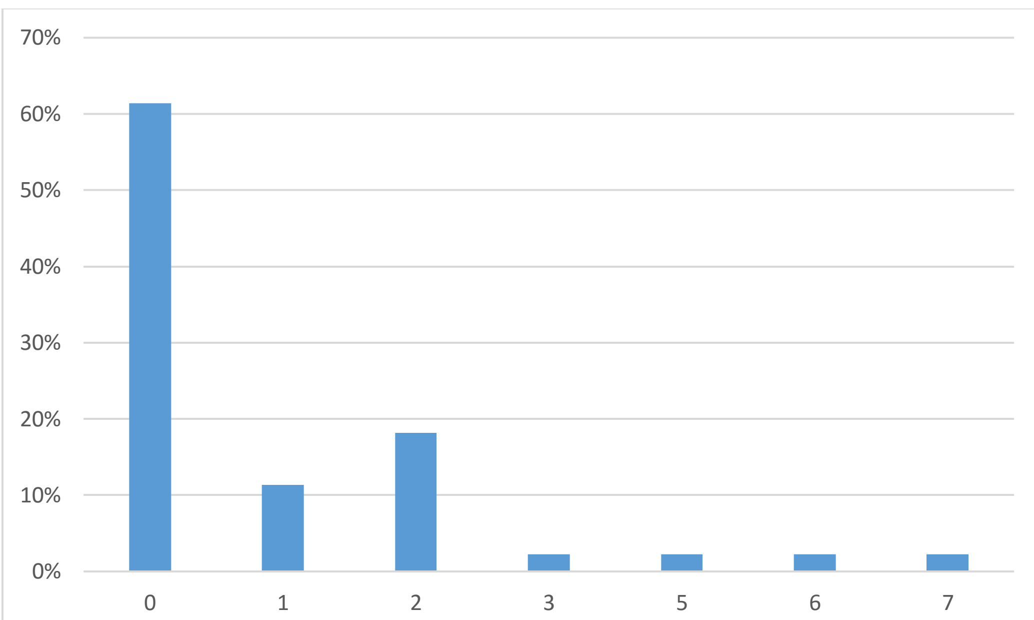
Plant-specific variations

Some differences were seen for this question, with plant-specific CPA respondents more likely to say they had no skills gaps compared to non-plant specific respondents.

Workers leaving the business

a) Construction plant operatives

Two thirds of respondents (61%) indicated that they had no construction plant operatives leave their business within the last 12 months. Across the remaining respondents a total of 42 plant operatives had left. One respondent was not able to provide a numerical answer, but estimated the number as being below 5%. As an employer of 8,000 this number could be significant, but would be at odds with the results of the other respondents and so is treated as an outlier for this question.



n=44

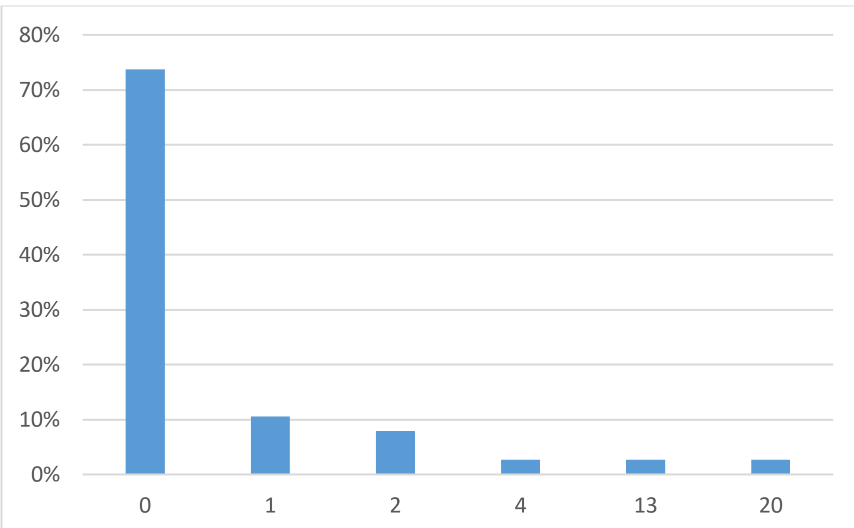
[18] https://www.constructionnews.co.uk/best-practice/skills/44bn-amp6-demands-multidisciplinary-workforce/10014905.article

This data would suggest that there is a relatively low level of 'churn' in the construction plant operator sector. Unfortunately, no readily available data exists to benchmark this figure with wider sector data.

A recent report by IFF Research[19] looking at new entrant leavers in construction found that new entrants had usually been working as general labourers (47%), but employers also reported the next most likely group to leave the sector had been working as plant or machine operatives (12%).

b) All other staff

Respondents were less likely to have lost non-plant operative workers from their workforce over the preceding 12 months.

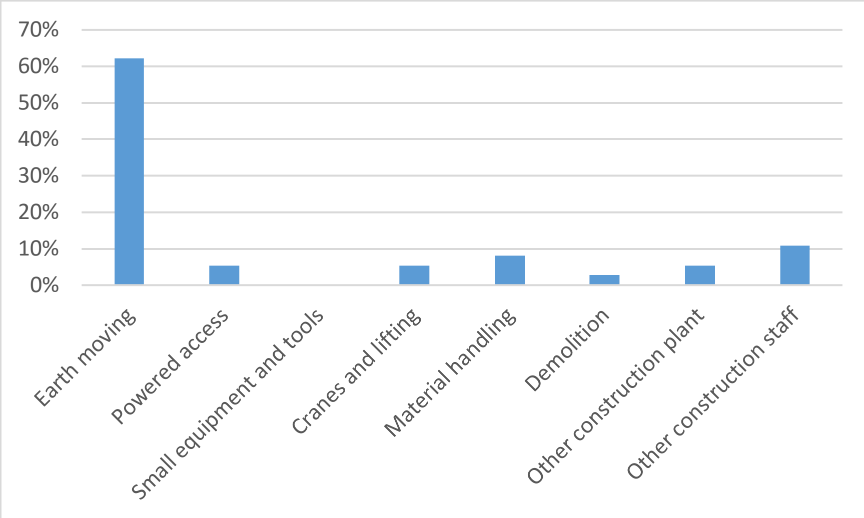


n=38

Breakdown of the construction plant roles that have left the business

The largest number of plant operatives leaving their employer during the previous 12 months were those employed to operate earth moving plant. This group accounted for over 60% of all operatives leaving their employer.

[19] The Construction Industry Early Leavers Survey, CITB April 2017

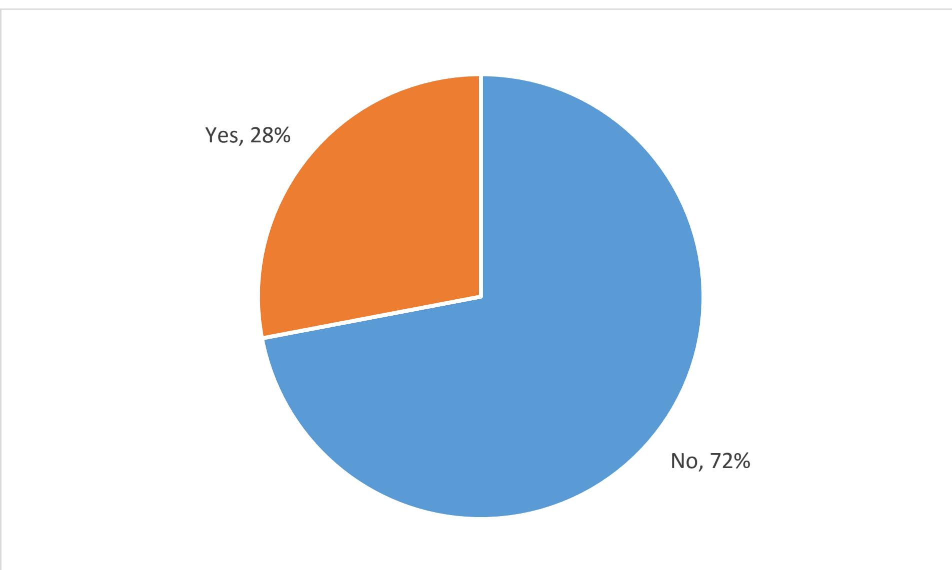


n=varies

While not perfect, there is a degree of correlation between the numbers of staff leaving the business and the numbers intended to be recruited over the coming year. This could suggest that a proportion of recruitment is to replace staff that have been lost rather than being due to new roles within the business.

Hard to fill vacancies

Just over a quarter of respondents (28%) stated that they had had hard to fill vacancies over the previous 12 months.



n=47

If yes, what roles?

- Apprentices
- Crane erector
- Crane operators
- Demolition management/supervisors
- Drivers
- Dump truck drivers
- Earth moving
- Engineers
- Fitter
- Machine operatives

Regional variations

There were no significant regional differences with regards to hard to fill vacancies. Respondents in the Midlands and London were slightly more likely to have had difficulties recruiting. Respondents from Wales indicated they had no hard to fill vacancies.

Size variations

Medium sized responding organisations were the most likely to have had hard to fill vacancies over the previous 12 months. Micro-sized respondents were the least likely to have had such vacancies.

Plant specific variations

Plant-specific CPA respondents were almost twice as likely as non-plant specific organisation to have experienced hard to fill vacancies over the previous 12 months.

Recruitment, training and retention difficulties

The area where most respondents experienced difficulties in relation to their workforce was in recruitment, where 39% indicated this was very or fairly difficult. Training staff and retaining staff was a difficulty for 11% and 13% of respondents respectively. Over half of respondents said that retaining and training staff was not a problem at all for them.

a) Recruiting staff

Response	Percentage
Not a problem	15%
Okay	33%
Quite difficult	26%
Very difficult	13%
Not relevant	13%

n=46

Respondents in London and Wales were the most likely to have had difficulties recruiting staff.

Plant-specific respondents expressed significantly higher levels of recruitment difficulties.

b) Training staff

Response	Percentage
Not a problem	51%
Okay	32%
Quite difficult	9%
Very difficult	2%
Not relevant	6%

n=47

Respondents in the North and London were the most likely to have had difficulties in relation to staff training.

Plant-specific respondents expressed slightly higher levels of training difficulties.

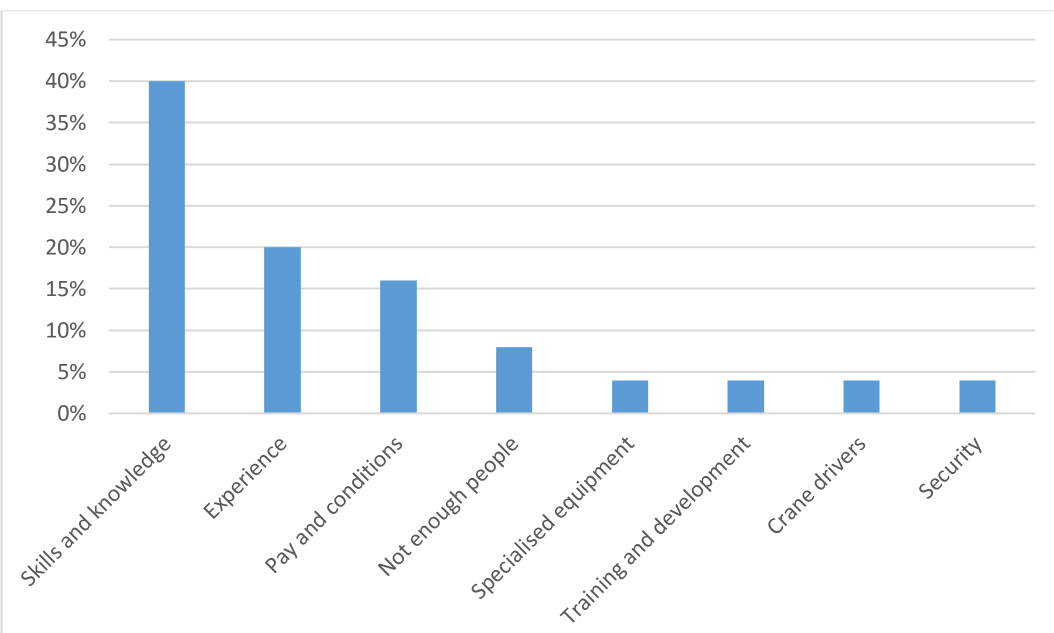
c) Retaining staff

Response	Percentage
Not a problem	59%
Okay	17%
Quite difficult	13%
Very difficult	0%
Not relevant	11%

n=46

Barriers associated with recruitment, training and retention of staff

a) Recruitment



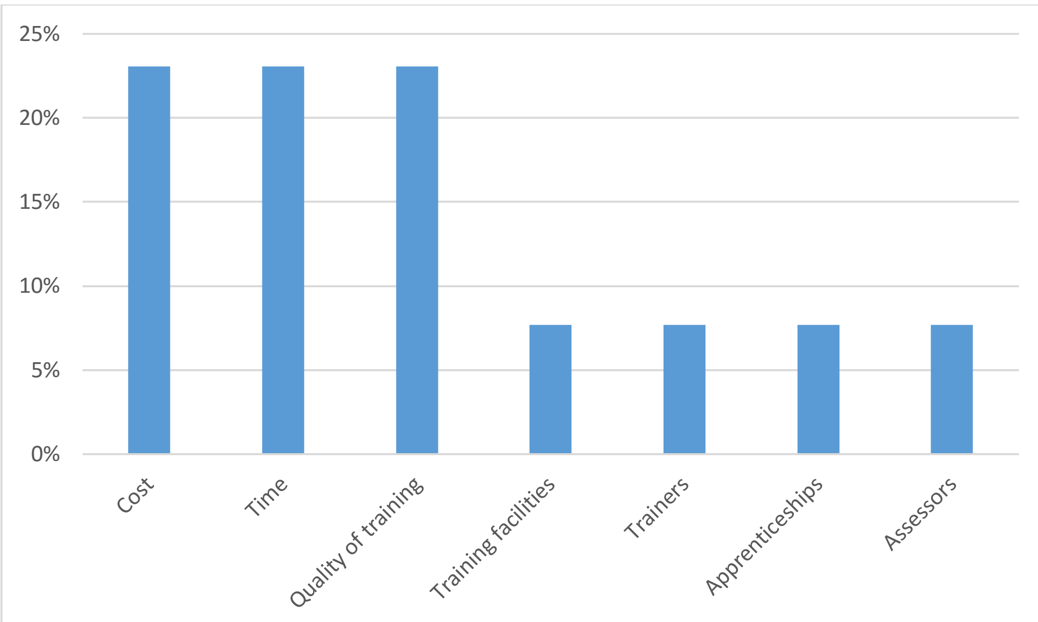
n=25

The biggest barrier in relation to recruitment of plant operatives was the skills and knowledge of potential candidates. The next largest barrier was the experience of candidates, which was felt to be different to skills and knowledge:

"Get staff that have the right skills; they have their CPCS cards but don't actually have the experience on the machines."

b) Training

The three key barriers for respondents in relation to training are the cost, the time off the job required to undertake training and the quality of the training that is available.



n=13

c) Retaining staff

The only barrier relating to the retaining of staff was pay, primarily that workers are pay sensitive and will move if there is better pay available elsewhere.

CSN Industry Insights Forecast: Annual Recruitment Requirement

The CSN Industry Insights Forecast 2017-2021 reveals that nine out of 12 regions / nations in the UK forecast an increase in the demand for plant operatives by 2021. The largest increases are found in:

- South East (18%)
- Greater London (14%)
- Wales (11%)
- Northern Ireland (11%)

A decrease in demand is forecast in:

- West Midlands (5%)
- East Midlands (3%)
- Scotland (1%)

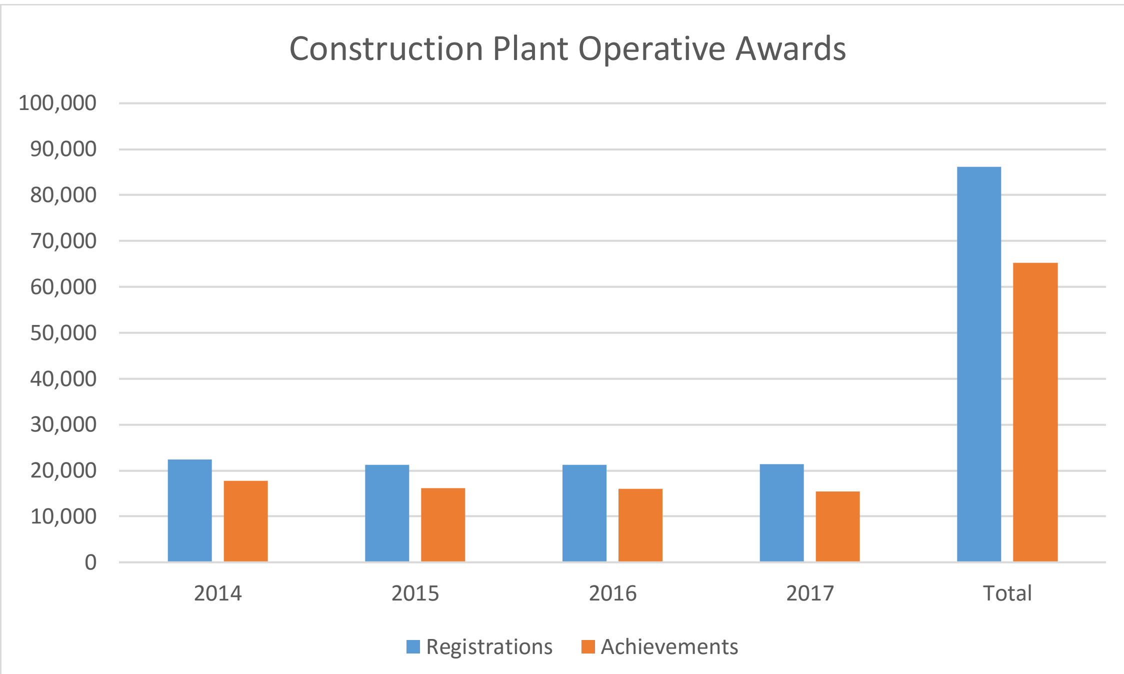
The evidence from the Supply and Demand study aligns with this data, highlighting as it does, recruitment difficulties primarily in London and Wales, two of the areas with the highest recruitment requirement. If the CPA were to develop a programme of school engagement to promote sector opportunities, this evidence may provide a useful insight into where to prioritise activity.

Skills, Training and Qualifications

Qualifications in scope

Analysis of construction plant qualifications, registrations and achievements data supplied by CITB for the literature review indicated that there are 65 relevant NVQ qualifications applicable to plant operatives. These range from NVQ Level 2 through to NVQ Level 5 and cover all aspects of plant equipment. A full list of these qualifications is given in Appendix C of the Literature Review. In addition, the CITB data shows that there are around 200 other awards available to plant operatives not at NVQ Level. Again, a full list of these is given in Literature Review report.

Across all possible awards, registrations and achievements have remained relatively consistent over the past three year[20]:



Note - 2017 is a forecast year end figure.

Common awards include:

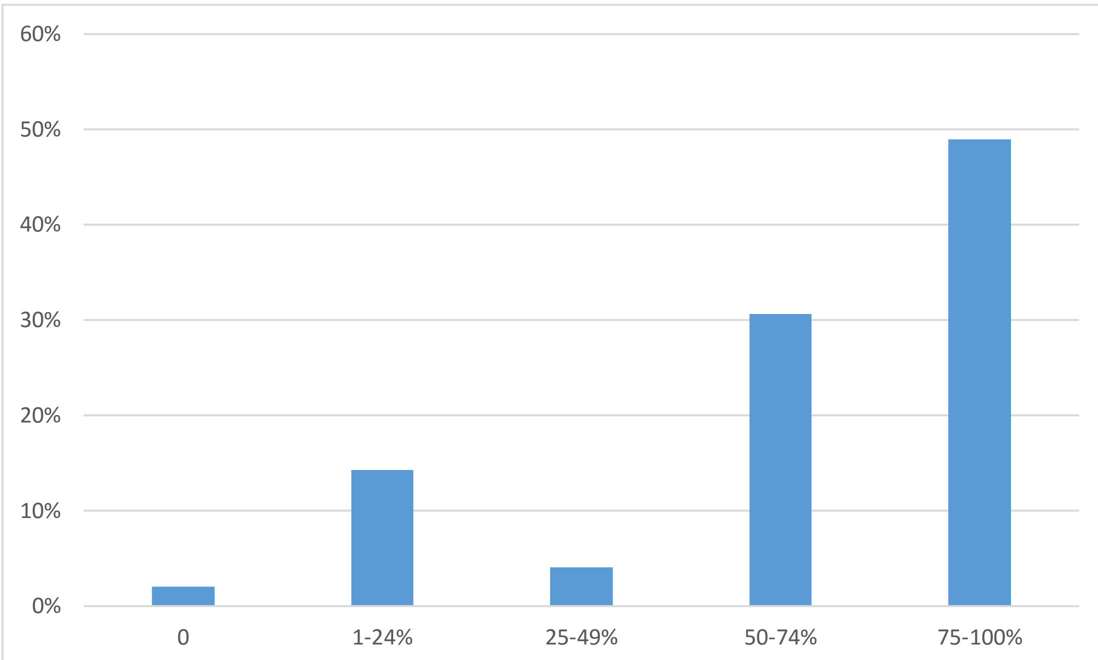
- L2 NVQ Certificate in Plant Operations (Construction) - Transporting Loads
- L2 NVQ Diploma in Plant Operations (Construction) - Excavating Plant
- L2 NVQ Diploma in Controlling Lifting Operations – Slinger / Signaller (Construction)

The main finding from the survey of CPA members was that, in the main, 'formal plant qualifications' is primarily taken to mean CPCS (or other competence scheme) Card. While a small number of NVQ and other qualifications were mentioned, the evidence from the member's survey did not align closely with the more quantitative analysis of award achievements.

[20] Source: CITB – Cskills Provider data – June 2017

Formal construction plant qualifications in the workforce

Nearly half of all respondents (49%) indicated that between 75% and 100% of their workforce had a formal construction plant qualification. Only one respondent indicated that none of their staff had a formal qualification.

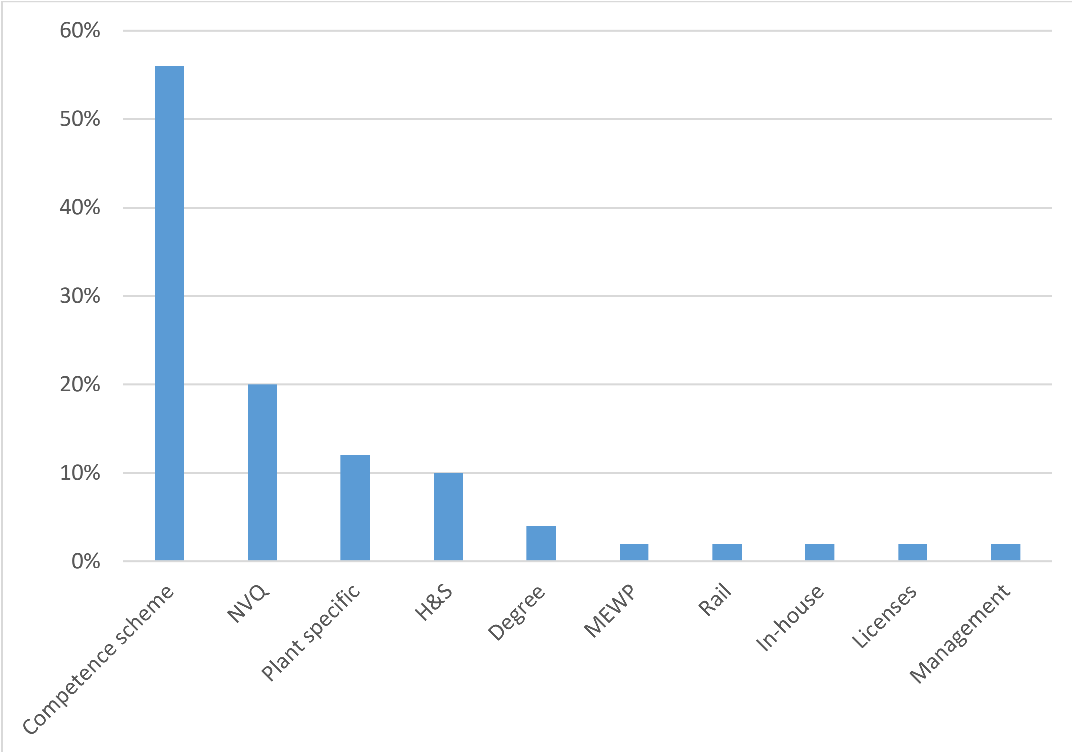


n=49

Types of qualifications

By far the most common qualification, cited by over half of all respondents, related to competence card schemes; primarily CPCS, but also included IPAF, NPORS and CSCS. A range of NVQs were specifically mentioned:

- NVQ 3 / 4 Crane Plant Operatives
- NVQ Engineering
- NVQ Construction safety
- NVQ HGV



n=47

A number of plant specialisms were also mentioned, without a specific qualification given:

- Crane driver
- Slinger
- Banksmen
- Crane operator
- Digger qualification and digger and grub lorry
- Fork lift
- Crane supervisor
- Low loaders
- Scaffolding
- Excavator
- Grab loaders
- Crusher
- Screener
- Tipping dumpers

While respondents were not able to necessarily specify specific NVQs associated with these qualifications, it can be assumed that a significant proportion of these will have an NVQ in order to have secured the appropriate Blue CPCS card. As identified earlier, it is estimated that around 80% of Blue CPCS card holders qualified for the card through achievement of an NVQ. Therefore, the level of NVQ qualification across the sector is likely to be high.

Literature review: Qualification levels

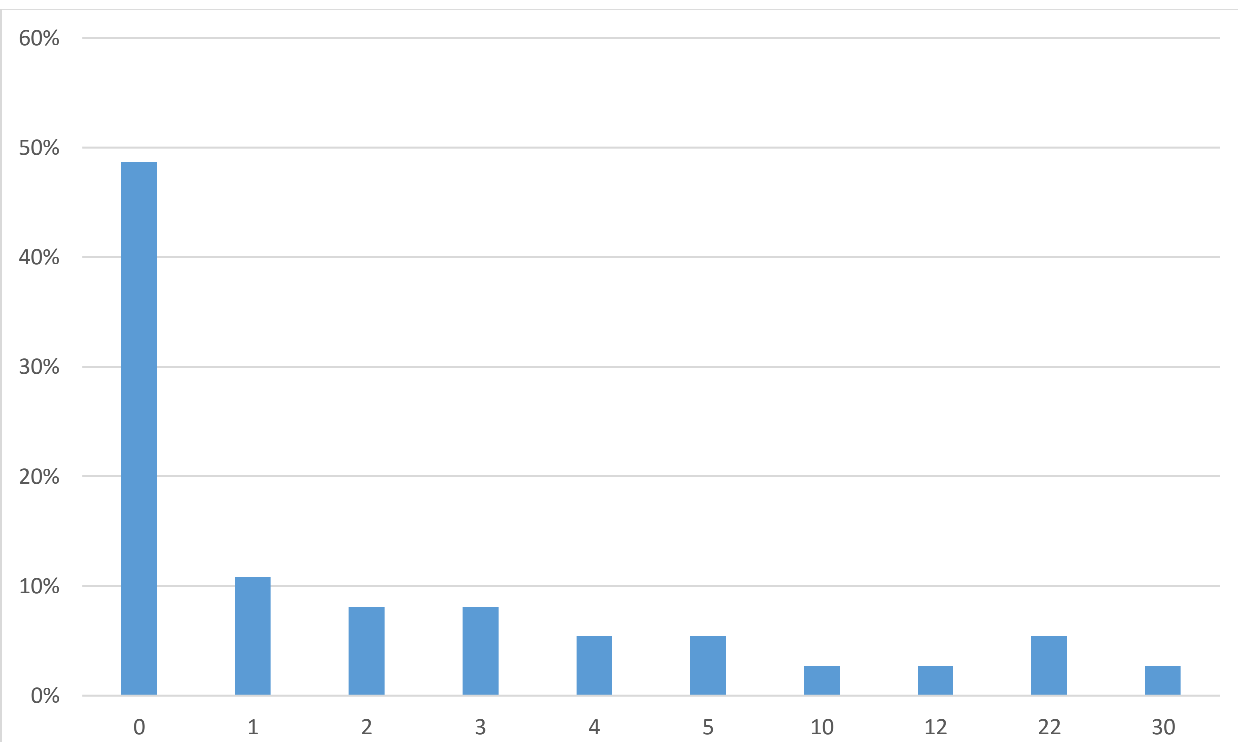
CITB Workforce Mobility and Skills (2015) reveals that 44% of plant and machine operators are unqualified. A similar proportion hold a level 2 qualification and 8% level 3. Only general labourer, banksperson and roofer have higher levels of unqualified workers.

A study of FE qualifications in England, Northern Ireland and Wales reveals that in 2011, 45% of all Level 2 Competence qualifications were linked to plant operatives. Furthermore, there has been no decrease in plant operative qualifications, while other occupations such as wood trades; other construction professionals and technical staff; civil engineering operatives; and bricklayers have shown noticeable drops in numbers.

Reviewing the CITB Mobility data alongside the primary research in this study presents an unclear picture, with the evidence from our research suggesting a higher level of qualification that the CITB study. The difference here may be due to the CITB study also including machine operatives, who could have lower levels of qualification. Given there has been no decrease in plant operative qualifications, compared to decreases across many other trades, this would provide further evidence to suggest a well-qualified plant operative workforce.

Qualifications achievement in the next 12 months

Half of the respondents (49%) responding to this question indicated that no employees would achieve a qualification in the next 12 months. Of the remainder, the number to achieve a qualification ranged from 1 through to 30. The average number of qualifications per respondents was 3.6.



n=37

Examples of the types of qualifications that will be achieved

As with training over the previous 12 months, of the respondents planning on training over the coming 12 months, the majority expected this to be in relation to competence schemes. Supervisory training, health and safety, and crane operation training was also mentioned by a small number of respondents.

Plant operations apprentices

The level of Apprenticeships being delivered by respondents is low, with over 80% stating they did not employ any apprentices currently. Of the remainder, the number of apprentices was typically between 1-4. There was one respondent who indicated they employed 300 plant operations apprentices[21]. *It is likely that this figure relates to overall numbers of apprentices rather than plant operative apprentices as other data available to the CPA would indicate that the largest number of plant apprentices in any one member organisation is c. 40.*

Plant operations apprentices over the next 12 months

Nine out of ten respondents did not expect to employ plant operations apprentices over the next 12 months. Of the three that did, two expected to employ one apprentice each and one expected to employ four.

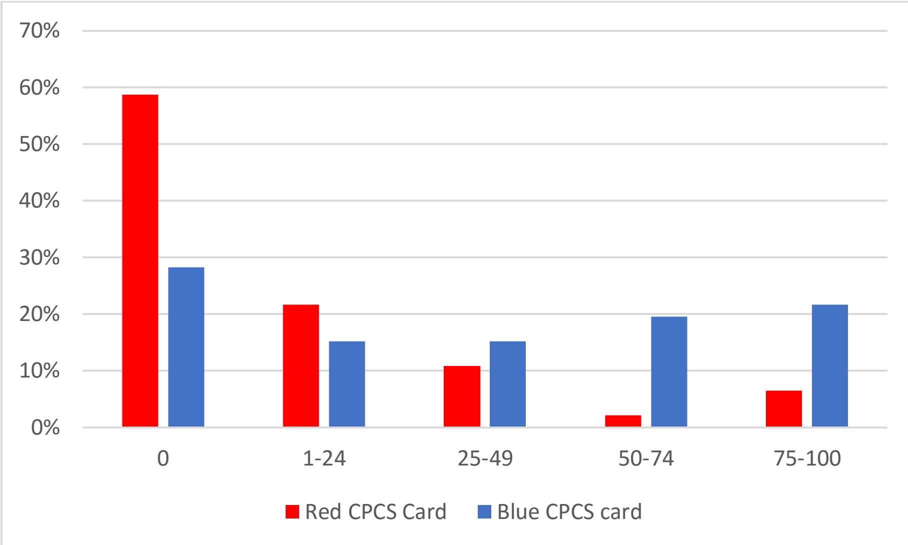
Given the high number of plant operatives holding CPCS cards and the fact that the CPCS requirements are all about demonstrating practical skills and knowledge via short duration training and an end test, this may, to an extent, account for the relatively low number of apprentices in the sector.

The CPA see this low level of apprenticeship training as feature of the past, where no widely recognised plant operation apprenticeship is available. To address this shortcoming, the CPA have worked closely with employers across the sector and have invested time and money in the development of a new style apprenticeship for plant operators. Market research suggests that there is a potentially significant market for this apprenticeship and that this will form a part of future planning for many employers in the sector. It is envisaged that the apprenticeship will operate side by side with the CPCS depending on business need. It is also hoped that the availability of a widely recognised apprenticeship for the sector will improve the attractiveness of the sector for new entrants.

CPCS card

Blue Competent Operator Cards are more prevalent than Red Trained Operator Cards across the CPA respondents interviewed. Nearly 60% of respondents have no employees with a Red Card compared to just 28% with no Blue Card.

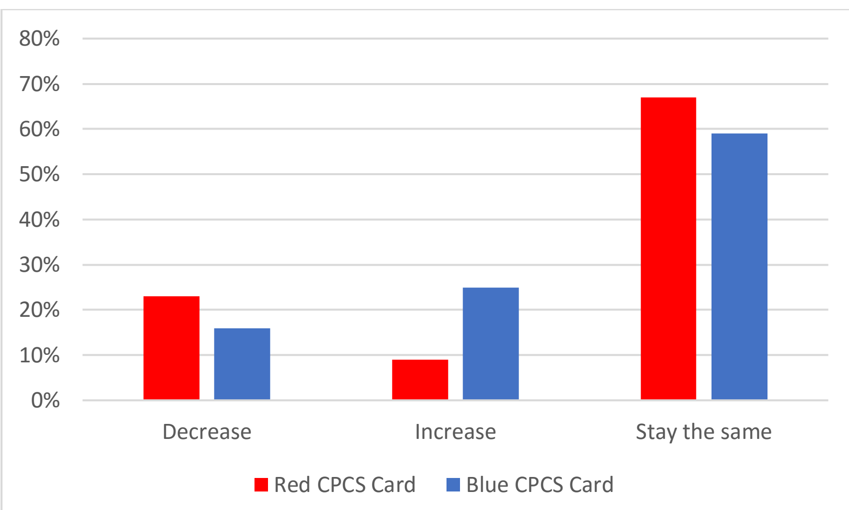
[21] This employer had a total workforce of some 8,000 employees, which would mean plant operation apprentices made up around 4% of the total workforce.



n=46

Expected number of operators to have a card in 12 months' time

Overall, there was little change anticipated over the coming 12 months, with around six out of ten respondents expecting no change. It was expected that there would be an increase in the number of Blue CPCS Cards and a decrease in the number of Red CPCS cards. While there may be some change due to Red cards being upgraded to Blue cards, there was a larger increase in Blue cards than a decrease in Red cards.



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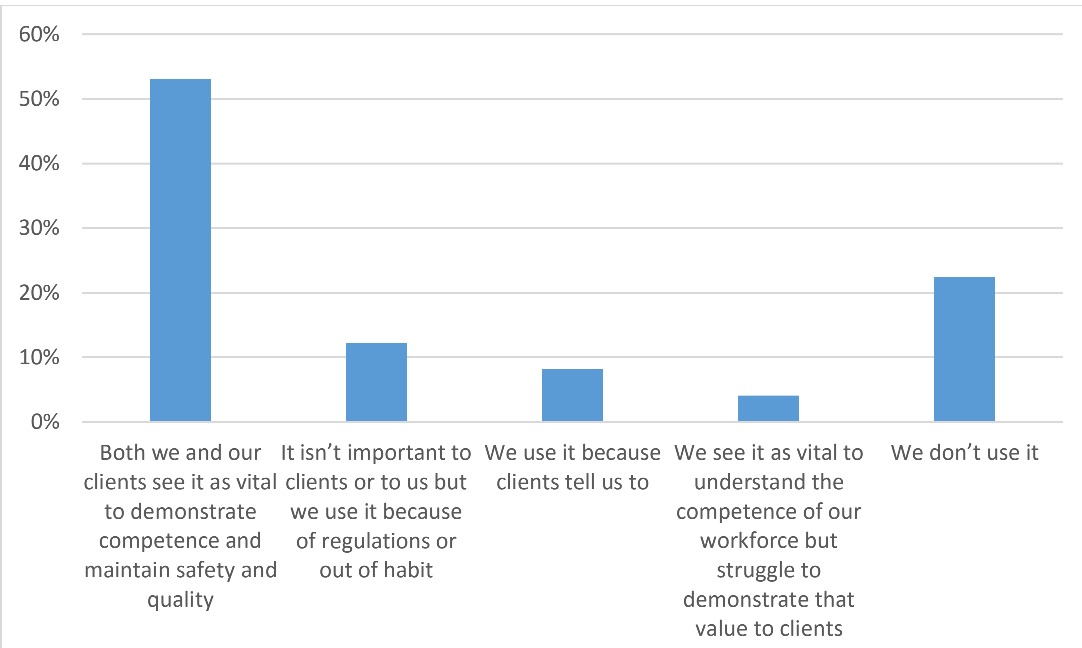
The nature of the CPCS card system means that one would naturally expect there to be a significantly greater number of Blue card holders than Red; firstly because the Red card is only valid for 2 years and cannot be renewed (only upgraded to Blue) and secondly because the Red card is intended to be the ‘stepping stone’ to the Blue card. In a ‘steady state’ company with an established plant operator it is therefore logical to assume that the number of Blue cards will be higher than Red.

Analysis of the ratio of Blue cards to Red cards shows that this is, on average, 5:1.

Relationship with the CPCS Card Scheme

Overall, the CPCS scheme is viewed positively amongst respondents, with eight out of ten respondents using the scheme. Over half of respondents (53%) stated that both they and their clients see the CPCS card scheme as vital to demonstrate competence. However, nearly a quarter of respondents (22%) do not use the CPCS scheme at all and a further 20% either use it because their clients require it, or because of regulation / habit.



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There is clearly a mixed picture with regards to the CPCS scheme. While it is used by the majority of respondents and seen as valuable by 57%, there is also evidence that the scheme is used because it is required by clients or regulators. We note that CPCS is mandated on all sites by the major construction contractors.

The Construction Leadership Council (CLC) agreed that from January 2015 the industry, including trade associations, contractors, clients, and government should specify and promote card schemes carrying the CSCS logo with no equivalents accepted. Build UK supports the CLC decision and its members have agreed to consistently implement its requirements.

It is a requirement under the Construction (Design and Management) Regulations 2015 (CDM 2015) for contractors to ensure any individual they employ or appoint to work on a construction site has the skills, knowledge, training and experience to carry out the work they will be employed to do in a way that secures the health and safety of themselves and others. This should be assessed and managed appropriately to ensure that individuals are undertaking the appropriate occupation at the appropriate level i.e. trainee, skilled, supervisory, managerial.

While the HSE guidance on implementing CDM 2015 states that, “Sole reliance should not be placed on industry certification cards or similar being presented to them [contractors] as evidence that a worker has the right qualities”, the guidance makes clear that “Nationally recognised qualifications (such as National Vocational Qualifications (NVQs) and Scottish Vocational Qualifications (SVQs)) can provide contractors with assurance that the holder has the skills, knowledge, training and experience to carry out the task(s) for which they are appointed”.

Regional variations

Respondents in the Midlands were by far the least likely to use the CPCS competence scheme, while those from the South reported the highest levels of both themselves and their clients seeing the CPCS as vital to demonstrating competence.

Plant-specific variations

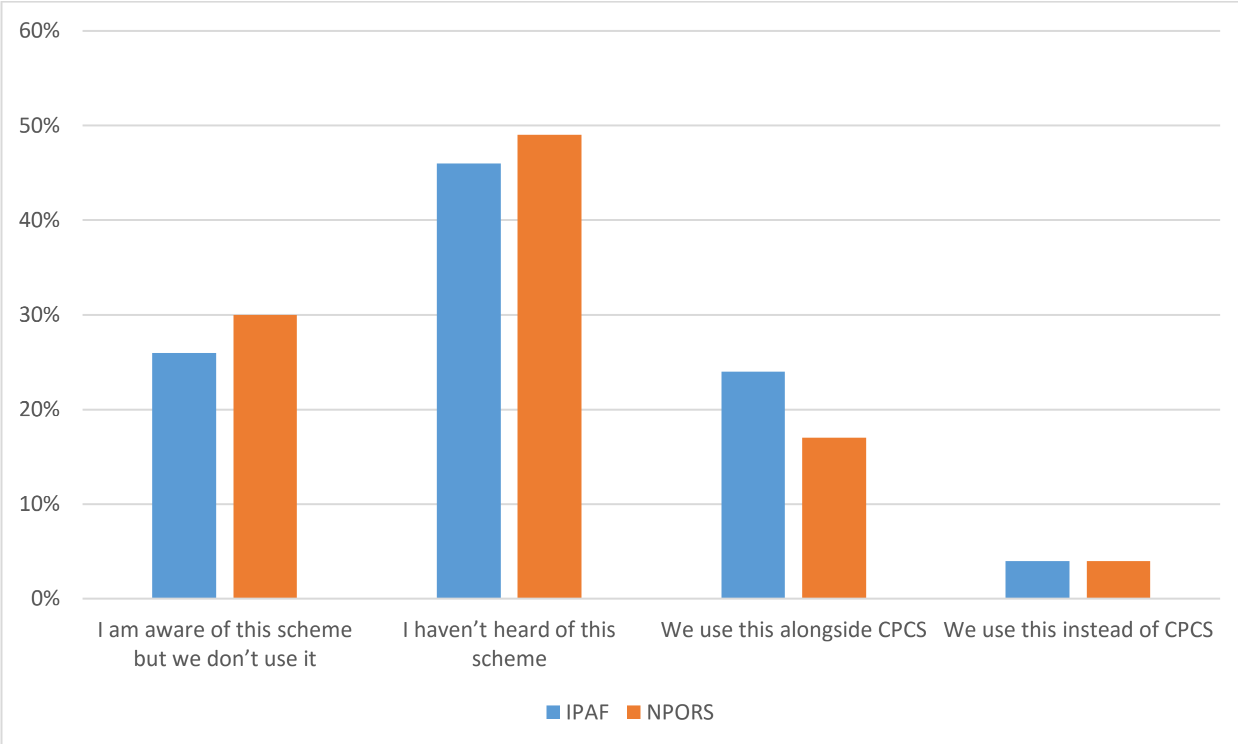
Non-plant specific respondents were more than twice as likely than plant-specific respondents to not use the CPCS card.

In terms of relationship to the CPCS card, plant-specific respondents were more likely to say that both they and their client saw the scheme as vital.

Relationship with other card schemes associated with construction plant

The relationship with IPAF and NPORS was very similar across respondents with close to 50% being unaware of either scheme. A further three in ten respondents were aware of the schemes but didn’t use them.

Of the respondents using either of the alternative schemes, most used this is conjunction with CPCS and only 4% using it instead of CPCS.



n =48

Findings from the literature review

Data shows that there are currently around 172,000 individual CPCS card holders[22]. However, as described in more detail in the Literature Review report, not all of these card holders are necessarily working in construction occupations. The Literature Review suggested that the CPCS is generally felt to have wide support within the industry and is generally recognised as adding value through ensuring workers have the necessary skills and competencies to operate safely and effectively. This was further explored through the primary research which would appear to broadly support this. As of March 2017, there were 133,251 Blue card holders and 48,051 Red card holders. As the primary differential between the Red and Blue card holder is the evidence of competence (typically shown through the achievement of a relevant NVQ), the CPCS card data indicate that there are a maximum of 133,251 card holders with qualifications. This would seem to support the findings presented earlier that most respondents equate the CPCS card to qualifications (without necessarily being clear as to which specific qualification has been achieved).

Average days of training for Plant Operatives

As previously noted, these figures should be viewed with caution due to the relatively high sampling error.

[22] The variation in the number of individual CPCS card holders (172,000) and the number of Red and Blue holders (181,000) is due to a number of individuals holding both Red and Blue cards for different plant equipment.

a) Off the job

How many days did they do in the last 12 months?

Across the 39 respondents who were able to provide a figure for the average number of days off the job training, the average was 3.9. Excluding the nine respondents who deliver no training, this average figure rises to 5 days.

How many will they do in the next 12 months?

On average, the anticipated number of days of off-the-job training over the next 12 months is higher at 4.9. Excluding those expected to do no training, the figure rises to 6.4.

b) On the job

How many days did they do in the last 12 months?

Across the 34 respondents who were able to provide a figure for the average number of days of on the job training, the average was 4.2. Excluding the 11 respondents who deliver no training, this average figure rises to 6.3 days.

How many will they do in the next 12 months?

On average, the anticipated number of days of on the job training over the next 12 months is lower at 2.6. Excluding those expected to do no training, the figure rises to 5.

Plant Operatives receiving training in the last 12 months

The average number of plant operatives that received training in the last 12 months was 14 per business. On average this represents around 5% of all employees or 32% of all plant operatives.

CITB Skills and Training in the Construction Industry 2016 revealed that 43% of plant and machine operatives have received on the job training in the last 12 months. As that sample was only construction companies, taking this data with that from our research would suggest that training is higher amongst construction companies than non-construction. Our research shows that training is higher among plant-specific companies compared to non-plant specific, which would tend to support this assumption.

Plant Operatives receiving training in the next 12 months

It is expected that an average of 9 operatives will receive training in the next 12 months, representing a 25% drop in the level of training.

Spending on off the job training for Plant Operatives

When asked about spending on off the job training the average spend, based on 26 responses, was £1,611 per person.

Planned spending in the next 12 months

The amount that respondents expected to spend on training over the next 12 months was slightly below the average spend above, at £1,529.

Taking the previous four questions together, it would appear that there is a slight anticipated decrease in the volume of training activity over the coming 12 months, with fewer operatives receiving training and slightly less being invested in the training per individual. Given there is a relatively low level of unmet training need, this would suggest that a reduction in planned training investment in not primarily driven by the availability of training.

Training needs for plant operative workforce in the next 12 months

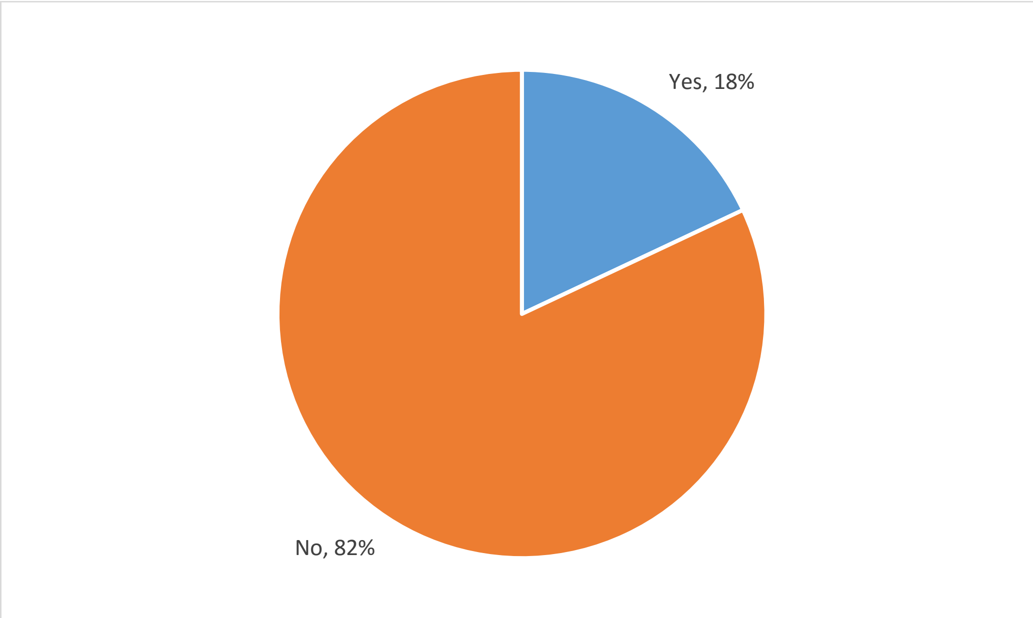
Fifteen respondents indicated that they had no specific plant operative training requirements over the next 12 months.

Of those with training needs, there were a number of broad areas of training emerging:

Competency scheme related	7
Cranes and lifting	6
Health and safety	4
Supervisory training	2
Slinger	2
NVQ	2
Industry specific	2
Everything	1
Operators	1
Harness	1
ADT	1
Site inductions	1
Telehandlers	1
Excavator	1
Apprenticeships	1
CSCS	1
Manufacturer	1

Unmet training needs

Eight out of ten (82%) of respondents currently have no unmet training needs.



n=49

Of those that did have unmet training needs, these fell into two broad categories; those that were plant related and those that were more general:

a) Plant specific

- CPCS (2 respondents)
- CPO digger to learn grub lorry driving
- New skills in new equipment/ crane
- Slinger banksmen
- Hire operators
- Crane operators

b) Generic

- Health and Safety
- Pay roll
- First aid
- Working at height
- NEBOSH in construction

Size variations

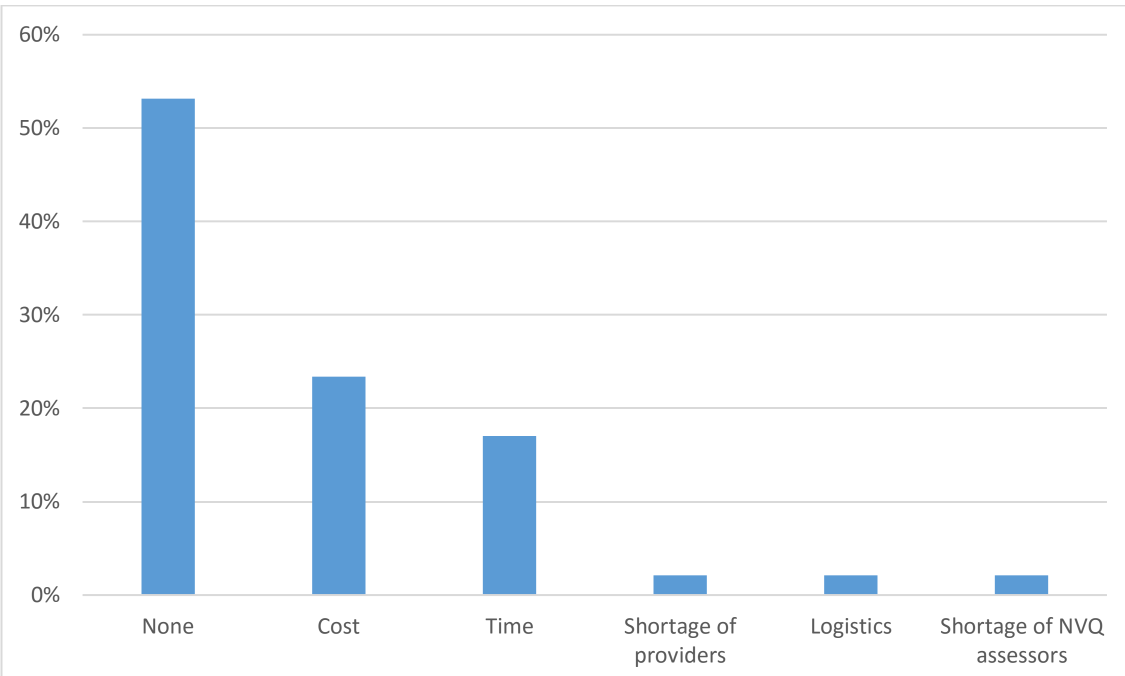
The likelihood of having unmet training needs falls as the size of the member organisation decreases. None of the largest responding organisations had such training needs over the previous 12 months.

Plant-specific variations

Plant-specific respondents were four times more likely than non-plant specific respondents to have unmet training needs in the last 12 months.

Barriers preventing members from training their workforce as much as they would like

While over half of respondents (54%) felt there were no barriers to them training their workforce, 46% did identify a number of barriers. By the far the most significant barriers were the cost of training (23% of respondents) and staff time off the job to undertake training (17%).



n=45

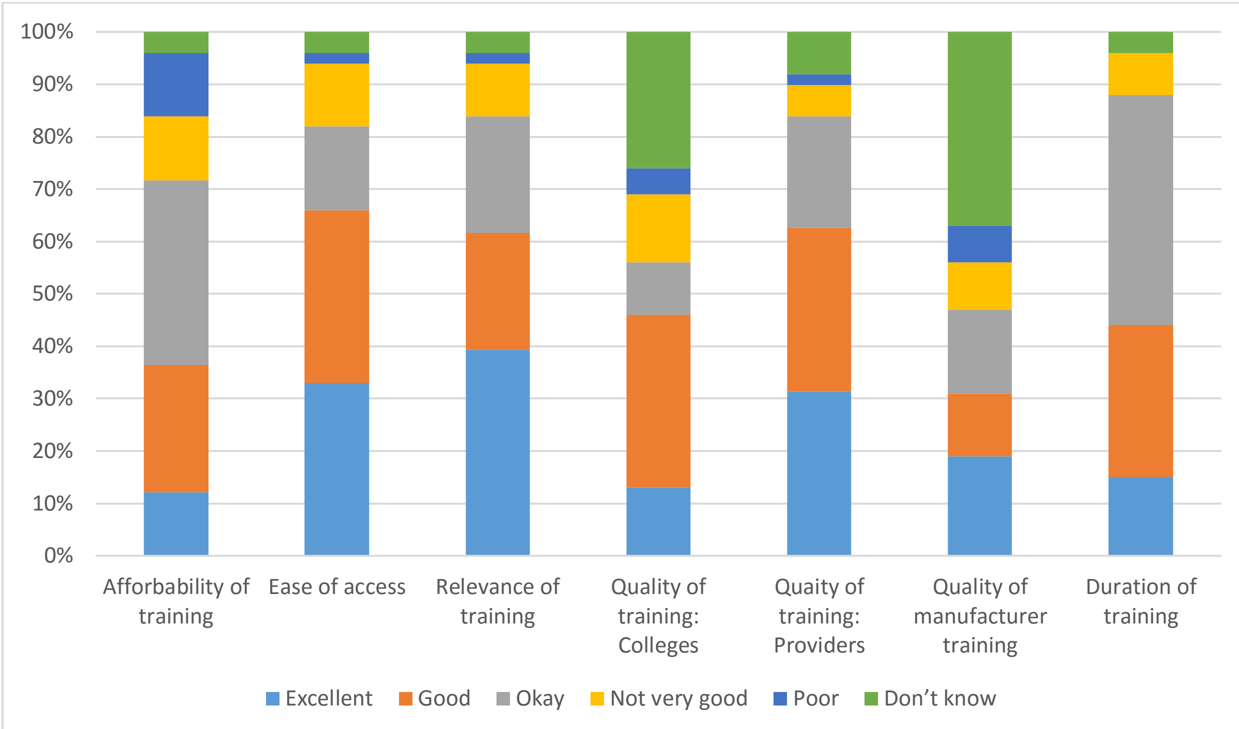
Satisfaction with training provision available to construction plant firms

The aspects where respondents are most satisfied with the current training provision are:

- Ease of access (66% Excellent or Good)
- Quality of training at private providers (62% Excellent or Good)
- Relevance of Training (61% Excellent or Good)

Areas with the lowest levels of satisfaction amongst respondents are:

- Affordability of training (24% Not very good or poor)
- Quality of training at colleges (18% Not very good or poor)
- Quality of manufacturer training (16% Not very good or poor)



n=varies

The cost of training was referred to several times throughout the survey, with high costs for perceived poor quality training being a key issue for the sector. While private training providers are generally seen as good quality, colleges and manufacturers are felt to offer poorer quality training. The low quality of college training is potentially a significant issue when considered in relation to the need to attract young people to the sector. If their initial experiences are poor through low quality training, this could potentially have a negative effect on them remaining in plant operation.

Biggest challenge for the construction plant industry in the next five years

Several broad themes emerged when respondents were asked about the biggest challenges facing the construction plant industry over the next five years.

Workforce related

The recruitment of young people into the industry to replace a largely ageing workforce was seen as a challenge by several respondents. In particular, there were concerns around the attractiveness of the industry to young people:

"Bringing in young people to the industry. We have an ageing workforce and no young people interested in starting. Training costs are too high and companies and sites are not interested in taking on non-experienced people as margins are too tight to tolerate inexperience."

"Staff at the younger end don't want to work in the industry; some because they don't want to get dirty and some because it's too hard to get into it (to get the qualifications and experience)."

At the other end of the career path, respondents also commented on the difficulty of *"keeping experienced staff."*

Training related (costs, staff)

It was recognized by respondents that access to skilled and experienced workers is important for the sector, but that in some cases access to these skills was a barrier. There was also an issue around poor quality employees and operators, which potentially have a detrimental effect on the wider industry.

"We are getting new operators coming through that have not got the skills to work on a site. To pass the CPCS card is quite easy, so they would not be a good enough worker to go on the site."

Competition

A number of respondents commented on the increasingly competitive environment, with a corresponding pressure on prices.

"There is an issue with false self-employment; some people think that they can do what they want and charge what they want because they work across the country, so it's hard for us to get the right staff at the right price."

Rules and regulations to adhere to

There was a feeling amongst several respondents that the regulatory environment was getting harder.

"Health and safety for people aged over 40 used to be lax - now people are getting put off because of the "red tape" (all the rules and regulations) - they don't fully understand the benefits of working in a safe environment."

Brexit

Brexit was identified by a small number of respondents as a possible challenge, especially in relation to the loss of qualified and experienced staff.

"The effects of leaving the EU will be very detrimental to business."

The above should be considered in light of the earlier findings that there are low levels of non-UK workers employed in plant operations. While this is clearly an issue for these specific providers, it may not be indicative of a wider issue.

Finance

Finance in relation to the availability of projects was mentioned by one respondent in relation to the rail industry:

"Budget gets cut year on year. They expect more for less."

Final comments

Respondents were given an opportunity to make final comments, to reiterate points made earlier in the survey or to raise points not previously covered.

The responses received fell into a number of key themes:

Concerns about the sector

Comments received in this theme concerned the pay within the sector:

"It's a low paying industry; there would be more people if pay was higher and it's a rewarding job."

A further comment concerned understanding of the user needs:

"Not sure plant hire industry is fully aware of user requirements particularly health and safety and needs of clients. Need to be more aware of the CDM."

Brexit

Brexit and the impact on the sector were raised by several respondents throughout the survey and further restated here:

"There are qualified people around but the experience is what is lacking. European funded money will be missed once Brexit takes its toll."

CPCS and other competence schemes

Respondents had both positive and negative comment on the CPCS and other schemes. The negative comments should be considered in light of the generally positive view of the CPCS scheme:

"There are cards for lots of different things. e.g. quarries, cement works. This means multiple costs for the business. There shouldn't be a need for half a dozen different cards as it drains resources. Could there be just one card linked to insurance."

"Some training is very expensive and some isn't so bad. NPORS is a much cheaper way of doing the qualifications, the test is cheaper and the training we can do at the place we're working at, so that saves time and money."

However, one respondent commented:

"CPCS is a good thing if you have an apprentice."

Comments about the CPA

Finally, one respondent had a comment regarding the CPA itself:

"When we contact the CPA they are always very helpful."

Contractor Consultation

To complement the Training Provider and Member surveys a number of major contractors were also consulted as part of the research, using a scaled down version of the Member survey.

Nine out of ten of the major contractors originally contacted were unable to make any full response citing they do not capture the information being asked for to an extent that they could provide enough detail. They also stated that, as much of their site work is carried out by supply chain companies and labour-only contractors, they also don’t record that sort of information from these companies / individuals.

The table below shows the contractors interviewed.

Company	**Average No. Employees**	**Plant Operatives**	**Principal Sector**
Contractor 1	9,000	800	Civils & Construction
Contractor 2	760	-	Roofing
Contractor 3	24	-	Roofing
Contractor 4	800	50	Homes
Contractor 5	1400	-	Homes
Contractor 6	2,600	700	Civils
Contractor 7	3,000	145	General Construction
Contractor 8	30	-	Joinery & Carpentry
Contractor 9	45	-	Scaffolding
Contractor 10	20	4	Groundworks

The average number of employees includes both direct and labour only contractors.

A number of the contractors are members of trade federations, principally:

- Roofing – NFRC
- Civils – CECA
- Home Building – HBF
- Construction – Build UK
- Joinery – BWF

The larger companies had the problem of knowing how many plant operators they employ and to which types of plant they can operate so the numbers quoted are based on best guesses / estimations.

Of those directly employed workers whose role is designated as a CPA/CPCS Plant operative, the contractors quoted that the principal plant items were:

- Excavators – 180 & 360 degree
- Telehandler / Forklift
- Specialist Road plant

A significant number of operatives operate "small or specialist plant" to facilitate their primary job role. Examples provided ranged across:

- Telehandler / Forklift – prevalent in roofing, homebuilding and scaffolding
- MEWPS – roofing and joinery, civils and general construction
- Welding & Cutting equipment – Scaffolding
- Mini excavators – seemed to be used in all companies except Roofing, Scaffolding & Joinery
- Drones – both roofing companies have been using drones to examine roof structures. Balfour Beatty have also been looking at drones for carrying out site surveys.
- Two contractors both mentioned growing interest in use of remote control, GPS controlled plant and "robotic" plant.

Not all employees operating specialist plant hold formal accreditation or a scheme registration card (e.g. CPCS) but all appear to have undergone some level of formal training – though with the caveat that some of the responses were "vague" as to what level of training was undertaken.

All the companies use labour-only and supply chain companies who have similar requirements and ability for using plant to support their job role. All cited examples ranging across - dumper driving, mechanical power saws, piling/drilling, mini-excavators, concrete pumping, road/floor/concrete scabbling, mobile platforms, diamond drilling, specialist lifting and material handling equipment etc.

Skills gaps of the supply chain

This was the area were contractors felt least able to provide an informed response. All the contractors consulted expect their supply chain to provide workers able to use the "kit they need for the job", but they do not appear to actively monitor the levels to which they have been trained or accredited to operate such plant. The larger companies suggested that this was covered in their supply chain procurement contract stipulations, but admitted this was almost impossible to monitor as their supply chain companies often used supply chain/self-employed workers as well.

Plant operative training

All of the contractors who responded to the study expressed that, depending on the type of plant, then access to training could be difficult. Training for the larger pieces of plant such as cranes, 360-degree excavators, piling machines and heavy earth moving equipment is only delivered by a very limited number of training companies. Training on some very specialised equipment such a tunnel boring machines, giant earth movers and rail plant is only available via manufactures or perhaps a single provider.

Most other types of plant – large & small – also had long waiting times for training dates. There were also mixed views on the range of Registration & Accreditation schemes involved with plant training especially with smaller pieces of plant. For example, one contractor stated: *"You need a certificate to change the blade on a mechanical saw, but don't need a certificate to operate one!"*

While not necessarily raised by contractors in this research, we do note the growth in "plant simulation" equipment that is now coming into plant training. This may well may well increase access to initial training and overcome some of the barriers related to limited training provision. The National Construction College have just introduced 12 of these simulation trainers and we believe that other providers will follow.

Skills & Qualifications

Where necessary or mandatory then all the companies provide training to accreditation level – CPCS was the most cited measure of competence for the "large plant" operated by their direct staff and used to confirm the competency levels of supply chain operators. NPORS, IPAF, RAT (Rope Access Training – used by many in cladding and steelwork) and CISRS (Scaffolding) were the other principle schemes quoted. However, there was still vague or "don't really know" comments when it came to recognising the skills/qualifications within their supply chains. CSCS was also mentioned as this scheme also registers some plant operations.

Training Needs & Access

Over 60% of the companies said that as business grows they expect to increase workforce numbers and plant training would be high on their list for new workers. However, none seemed able or willing to supply any projection of recruitment numbers and especially not where specific plant training would be required. All respondents said that access to plant training was a problem with waiting times of "months" for some types of plant and not enough local training supply so they often have to send operatives long distances to get the "right training".

While providing a degree of evidence which supports the findings of the more detailed Training Provider and Member surveys, it is clear that, in many cases, main contractors often feel themselves to be "too removed" from the details of the skills and training of their supply chain plant-operators.

Key findings from Training Provider Survey

Introduction

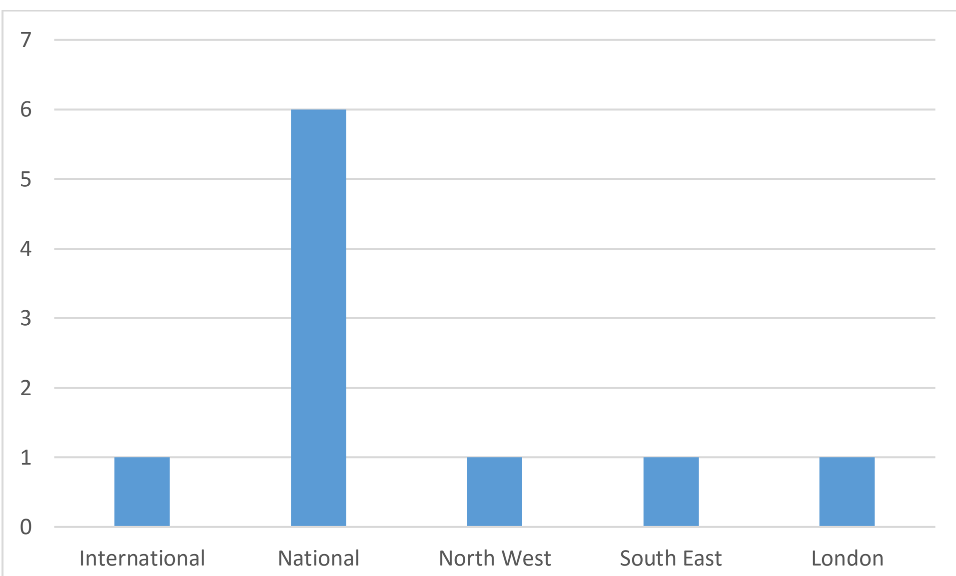
This report presents the headline findings from depth telephone interviews with ten training providers during July 2017.

The Training Provider Survey is part of the wider CPA Construction Plant Operator Supply and Demand Study, which includes surveys with ten key construction sector contractors and with 50 member organisations of the CPA.

The findings from the Training Provider Survey, while interesting in their own right, will be incorporated into the final report for the project where the findings will be used triangulate the findings from the surveys with other audiences to build up a complete picture of the employment and development of construction plant operatives.

Main findings

Main catchment area



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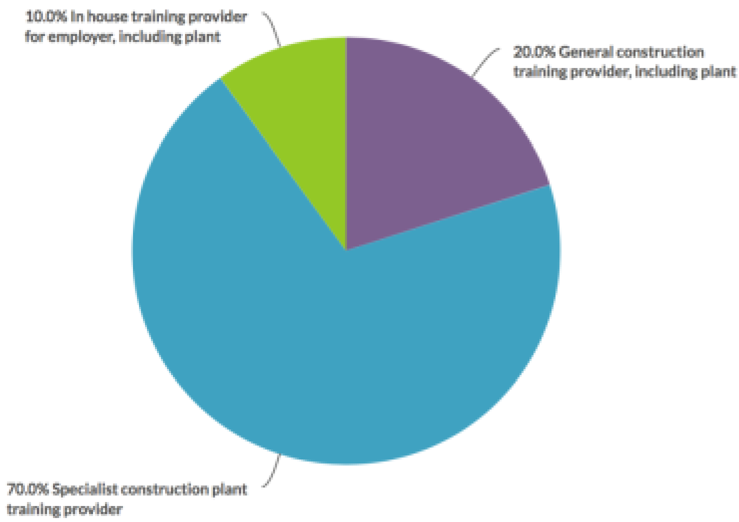
Six of the ten training providers taking part in the survey operate nationally. One described their catchment area as international, although primarily in London and the South East, and a further three operated primarily within their region.

1. How would you describe yourself?



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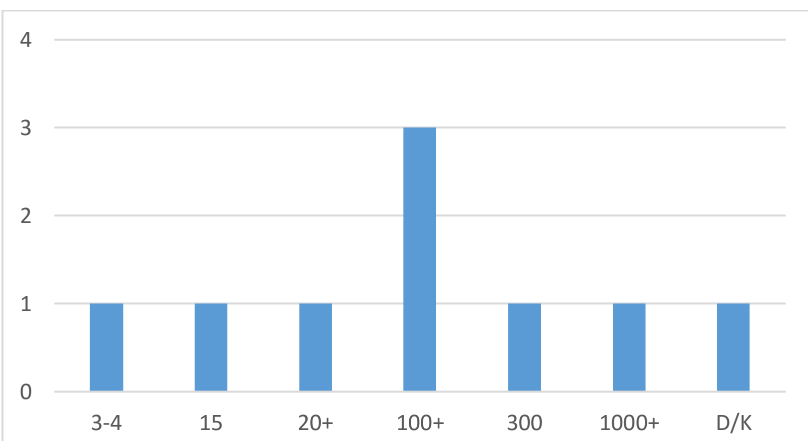
The majority of providers (seven out of ten) described themselves as a specialist plant training provider. Two were general construction providers and one was an in-house training provider for an employer (a groundworks and demolition contractor based in the South East).

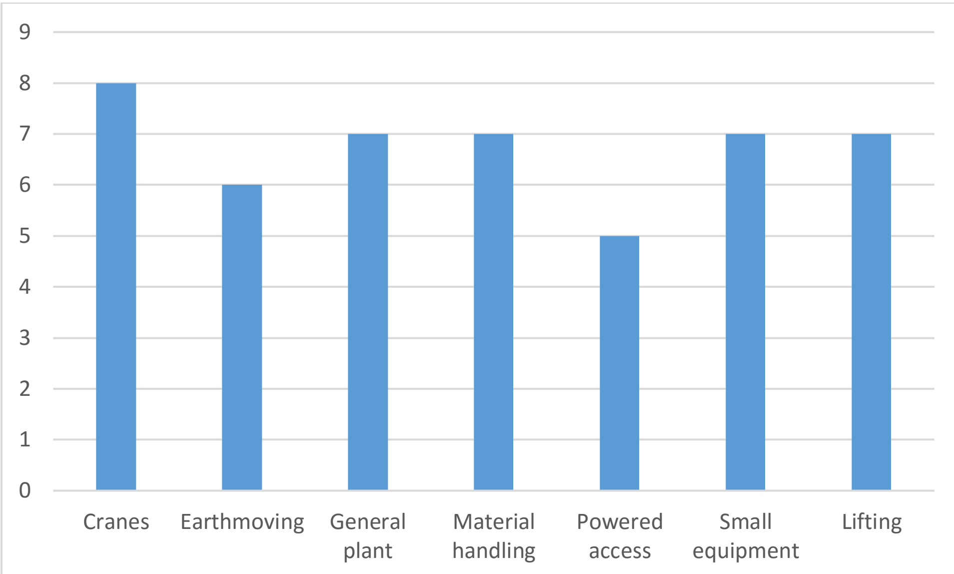
2. Approximately how many construction company clients would you typically deal with in a year?



n= 9

There were large variations in the number of sector clients services by providers; from 3-4 (a new provider to the sector) through to those dealing with hundreds of clients per year. The in-house provider only delivered training for that business.

3. Do you provide training in any of the following specialist construction plant sectors?



n=9

Training in all of the plant specialties identified was provided by at least half of the providers. Five providers indicated they provided training across all seven specialisms. Two providers specialised in crane and lifting equipment training.

4. Do you provide training and/or accreditation for any Construction Plant Operative competence schemes?

	Training only	**Training and accreditation**
CPCS		7
IPAF		2
NPORS		6
Other - ALLIMI lorry loading		1

n=10

Seven of the ten providers delivering training and/or accreditation for at least one competence scheme. All of those delivering training against recognised competence schemes also provided accreditation. CPCS was the most common competence scheme, with over half of respondents also delivering training and accreditation for NPORS. The only other scheme identified was the Association of Lorry Loader Manufacturers and Importers (ALLMI) delivered by one provider.

The CPA member survey revealed that the majority of respondents used the CPCS card scheme, with much lower numbers using alternative schemes. The provision of training and assessment found amongst providers would suggest a good match between supply and demand in this regard.

4a. What proportion of your provision is delivering training and accreditation for these schemes?

Where providers were able to indicate the proportion of training and accreditation across competence schemes, the average values were:

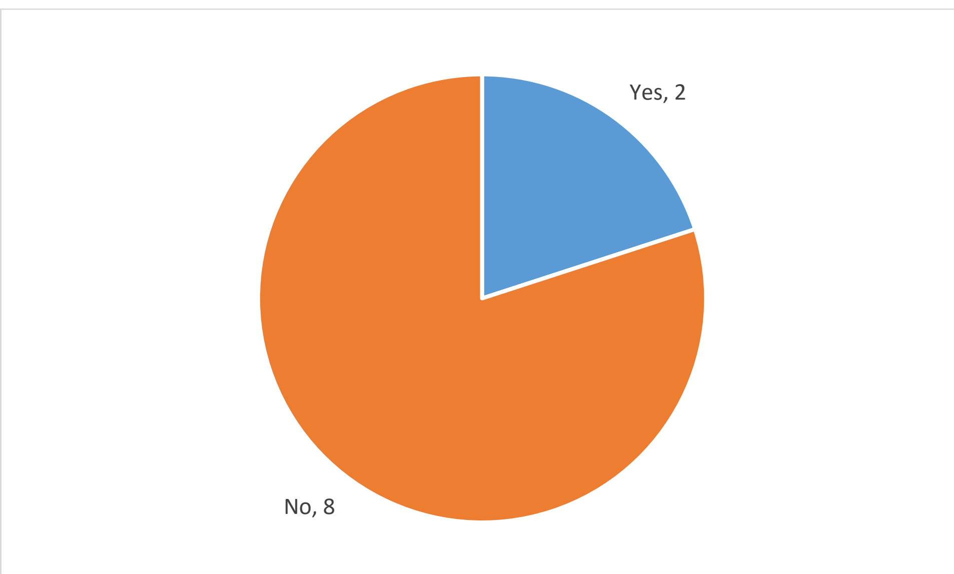
	Average
CPCS	68%
IPAF	*No data provided*
NPORS	13%

n=8

For those seven providers delivering CPCS, five indicated that 80% or more of their training and accreditation was for this scheme. For the remainder it was less than 25%. For those delivering NPORS, this accounted for no more than 20% of their provision.

Apprenticeships

5. Do you offer apprenticeships in construction plant occupations?



n=10

Only two of the training providers taking part in the survey indicated that they provided Apprenticeships in construction plant occupations.

The level of Apprenticeships being provided amongst organisations responding to the CPA member survey was low, again suggesting good levels of supply and demand with the available provision.

6. Please say which apprenticeships you offer?

The specific Apprenticeships offered by training providers were:

- Diamond drilling and sawing
- High MTC, General Construction, Floor coverings

One provider indicated that they delivered Apprenticeships but only in general construction not plant operation.

7. How many staff are in your Apprentice employment team?

Of the two training providers offering Apprenticeships, one had an Apprenticeship team of 10 and the other a team of three.

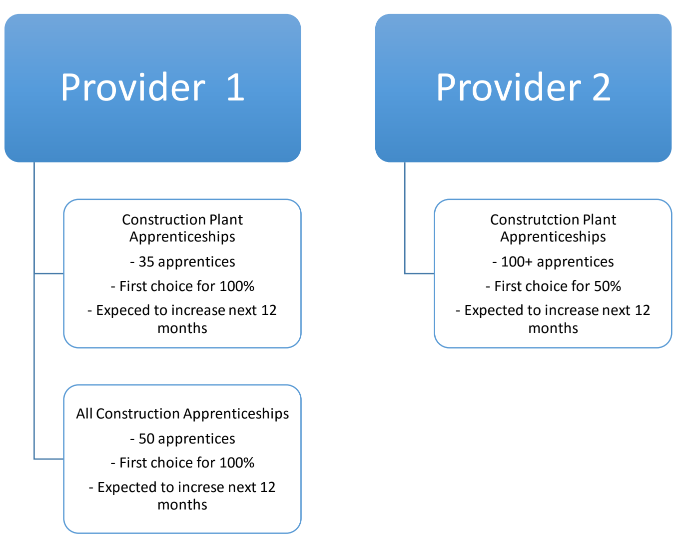
8. How many of these have a specific construction focus?

Both providers indicated that all members of their Apprenticeship team had a construction focus.

9. How many staff in total have a construction plant specialism or focus?

When asked about their wider workforce, one provider indicated they had four staff with a construction focus and the other had eight.

10. Please indicate how many apprentices you currently have, and how you expect this number to change over the next 12 months.



n=2

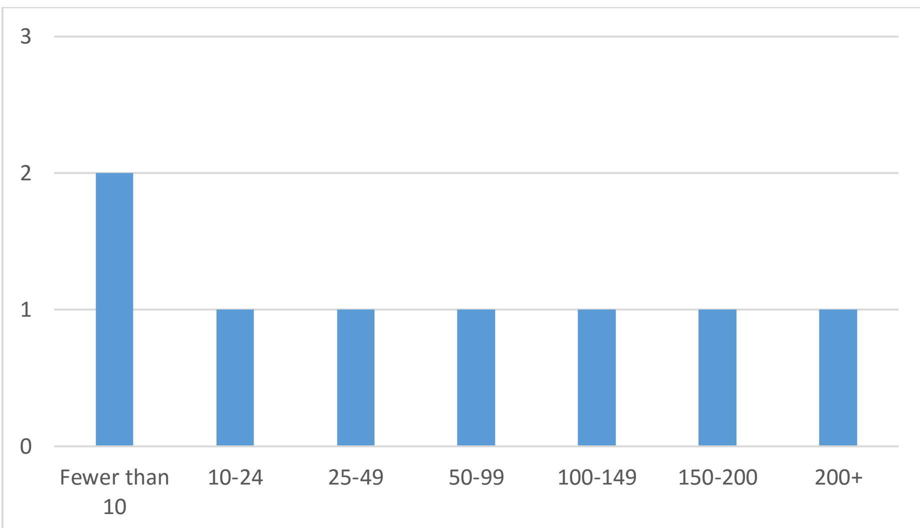
11. How often typically do your assessors visit apprentices on construction sites?

One provider stated that their assessors visited apprentices on site weekly, the other more frequently with daily visits.

General Construction Training Provision

12. Please indicate how many general construction trainees you currently have, and how you expect this number to change over the next 12 months:

Construction students studying part-time vocational qualifications:



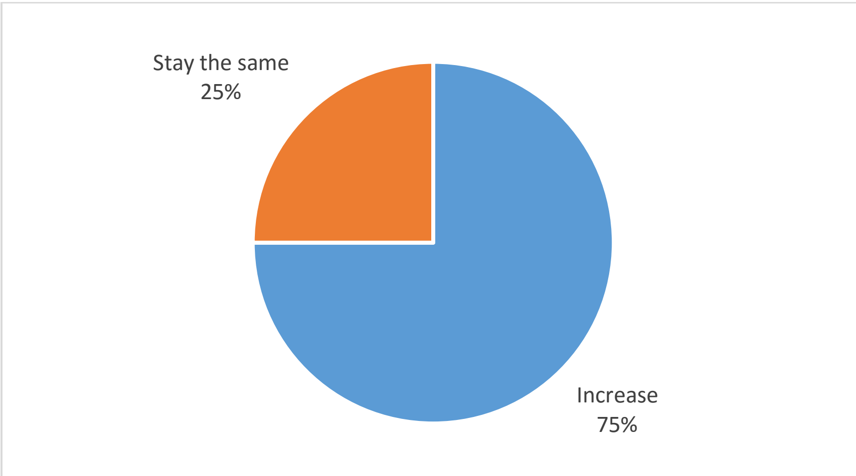
n=8

The number of construction students studying part-time vocational qualifications varied between the smallest at three and the largest at 400.

Construction students studying full-time vocational qualifications:

Only one training provider had students studying full-time vocational qualifications, with 12 currently receiving training.

In the next 12 months, do you expect the number of part time learners to increase, decrease or stay the same?



n=8

Six of the eight providers with part-time students expect to see an increase in the number of these over the next twelve months.

The level of expected training increase amongst providers would appear to be significantly greater than that anticipated by CPA members. This could suggest an oversupply of provision in some areas. However, the question for training providers did consider construction training in general, rather than plant specific. If the training provider assessment is correct, this would suggest a higher level of training in construction occupations other than plant operations. This is supported by some of the evidence highlighted from the literature review.

In the next 12 months, do you expect the number of full-time learners to increase, decrease or stay the same?

The one provider who currently has full-time students expected this number to increase over the next 12 months. In addition, one of the providers who currently only had part-time students expected the number of their full-time students to increase in in the next 12 months.

13. Please give reasons for any anticipated change in numbers.

The reasons cited by providers for the increase in the number of students were given as:

- **Market conditions**
    - HS2 approved Heathrow expansion. Both should increase need for training
    - It's down to the job market. There are a lot of foreign nationals in London with green and white cards who haven't a clue what they mean.

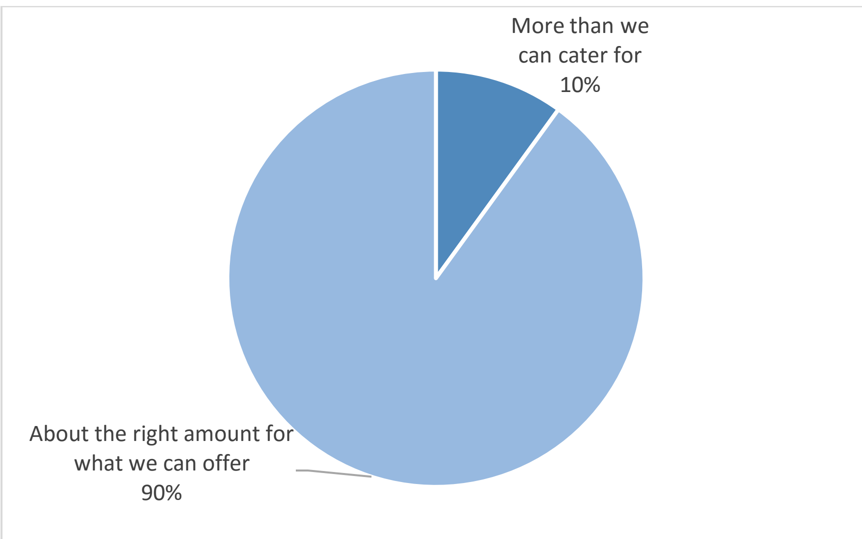
- **Competence card requirements**
    - Expiry of card – renewal
    - We hope NPORS will increase and CPCS must increase
- **Increased training demand**
    - Companies pushing for training
    - Increase in subbies needing training

The reason given for the number of students staying the same:

- Funding difficulties
- Depends on marketing and demand

Views about the Market for Construction Training

14. How would you describe the market conditions for construction training in general?



n=10

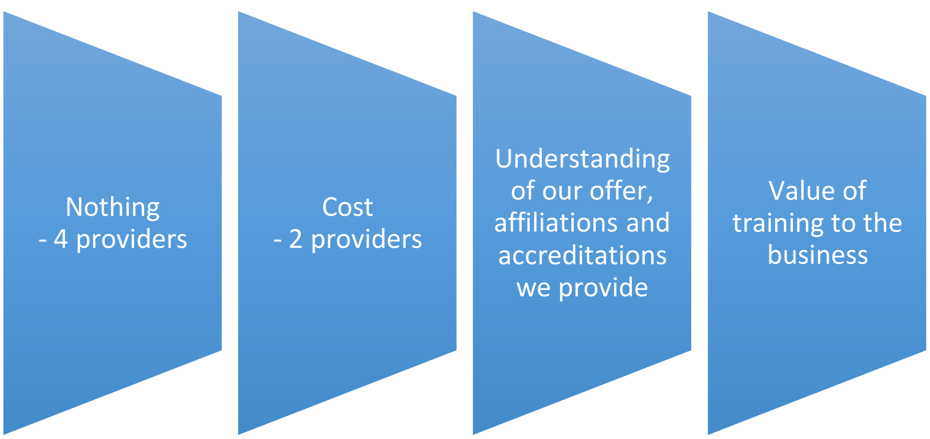
Nine out of ten training providers indicated that they had 'About the right amount of work for what we can offer', with only one provider indicating there was more work than they could currently handle.

15. Please say why you feel this way.

Right amount of work	More work than we can currently manage
• "Could always do with more work" (5 providers) • Low standard of construction workers coming from overseas • Taken on an additional assessor to cope with the volume of work	• A large current need for Level 3 Occupational Health training

n=8

16. What, if anything, do you believe inhibits demand for training in the construction sector?



n=8

"The reward for the workload. Site workers are not academic people. There's a demand for work but employers want return on investment. People go because the site manager says so. They worry about blame and claims. They are only really interested in getting the card."

Construction plant trainees

17. Please indicate how many construction plant operative trainees you currently have completing part time vocational qualifications; full time vocational qualifications and non-NVQ learning?

This question proved quite difficult for training providers to answer and as a result the data on numbers of full-, part-time and non-NVQ learning is incomplete.

Where providers were confident in their numbers the following findings emerge:

- One provider was able to state they had 20 non-NVQ crane trainee and 30 non-NVQ general plant trainees
- One provider had 100% part-time crane trainees
- One provider indicated they had 30% full time material handling trainees, 30% full time earthmoving trainees and then the remaining 40% spread across the other provision.
- One provider had 80% part-time vocational qualification students in earthmoving/material handling, 15% non-NVQ students in the same specialism and a small number of other part time students in various specialisms.

17a. Please indicate how the number of construction plant operative trainees will change over the next 12 months.

Learners completing part-time qualifications

- Four providers expected to see an increase in the number of learners completing part time qualifications, while expected this number to stay the same.
- This pattern was the same across all plant specialisms: Cranes, Powered Access, Earthmoving, Small equipment and General plant.

Learners completing full-time qualifications

- The six providers responding to this question all stated that they expected the number of learners studying full-time to stay the same over the next 12 months.
- This was true for all plant specialisms.

Learners completing non-NVQ learning

- One provider expected to see an increase in non-NVQ learning across all plant specialisms over the next 12 months while another expected a decrease.
- Five providers expected number to remain static.

n=7

18. Please give reasons for any anticipated change in numbers:

A variety of reasons were given for the anticipated changes, as shown below:

Increase

- Green card people need to be qualified to go onsite. White cards are not a qualification for onsite work.
- All students doing either 360 excavators, forward tipping dumpers, ride on rollers and directional drilling. Expecting demand to increase for all. NVQs and CPCS.
- Demand is increasing.

Decrease

- Youngsters don't want to get wet. Prefer working with computers.

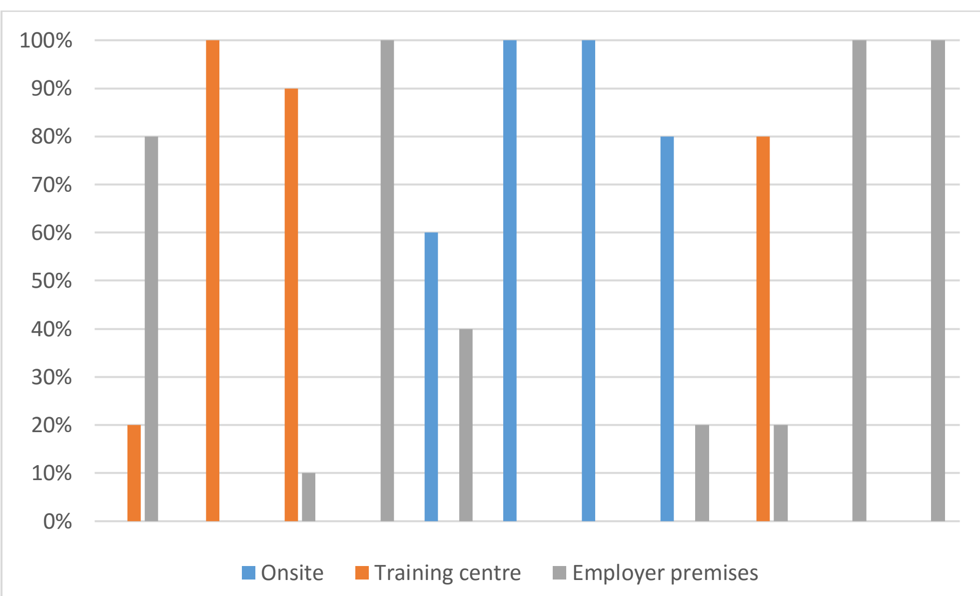
Stay the same

- Number changes not known. Doing well for a new company.

Format of delivery

19. Please indicate what proportion of the plant operative training and assessment is undertaken on-site, on employers premises or in a training centre.

Training



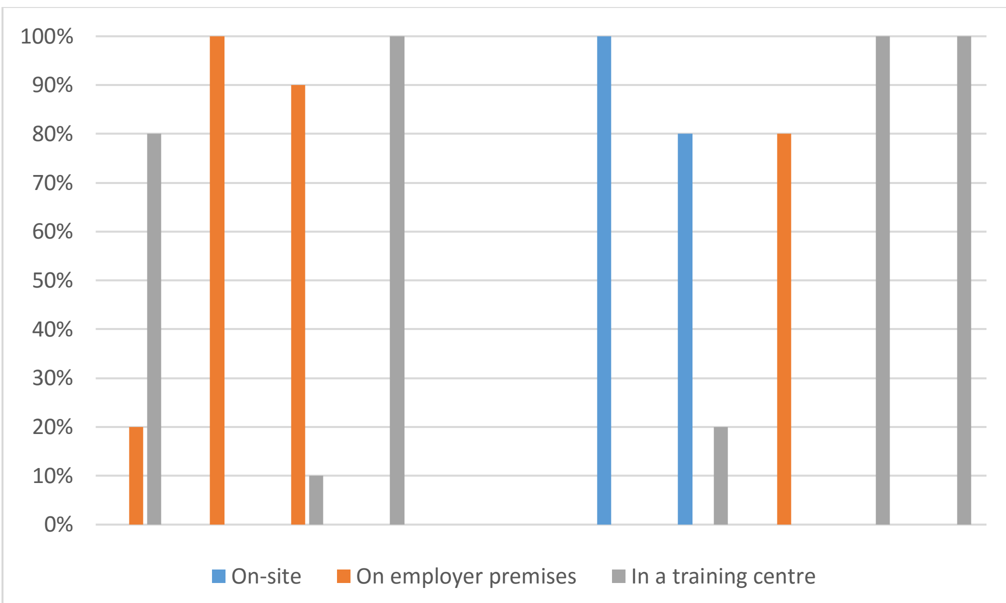
n=10

There was a broad range of training delivery format observed across the providers, with at least two providers delivering all or most of their training either on-site, in a training centre or on the employer's premises:

Primarily on-site	Primarily at training centre	Primarily on employers' premises
Two providers delivered all of their training on-site. One provided 80% on-site and 20% on premises and one provided 60% on-site and 40% on premises.	One provider delivered all of their training at a training centre and another provided the majority (80%) at a training centre.	Three providers delivered training purely on the employers premises, with a further provider delivering the majority (80%) on premises.

Table 3

Assessment



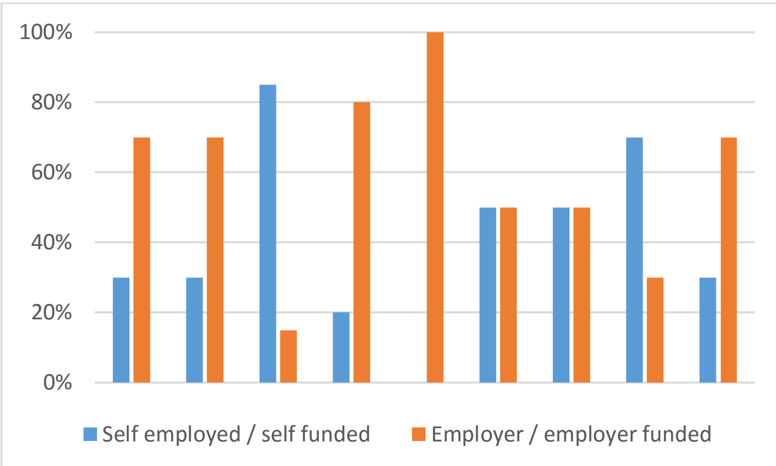
n=8

For the providers also providing assessment, a very similar pattern is observed to training delivery above, with different providers undertaking a majority of their assessment activity on-site, on employer's premises and in a training centre.

Two providers did not offer assessment as part of their provision.

Status of trainees

20. Please indicate what proportion of your trainees are:



n=9

Only one provider indicated that all of their trainees were employer funded (no provider had 100% self-funded learners). The remaining providers had a mix of self-funded and employer funded learners; four primarily employer funded and two primarily self-funded learners. Two providers had an equal split between employer and self-funded learners.

21. If possible, please estimate the proportion of your trainees who are:

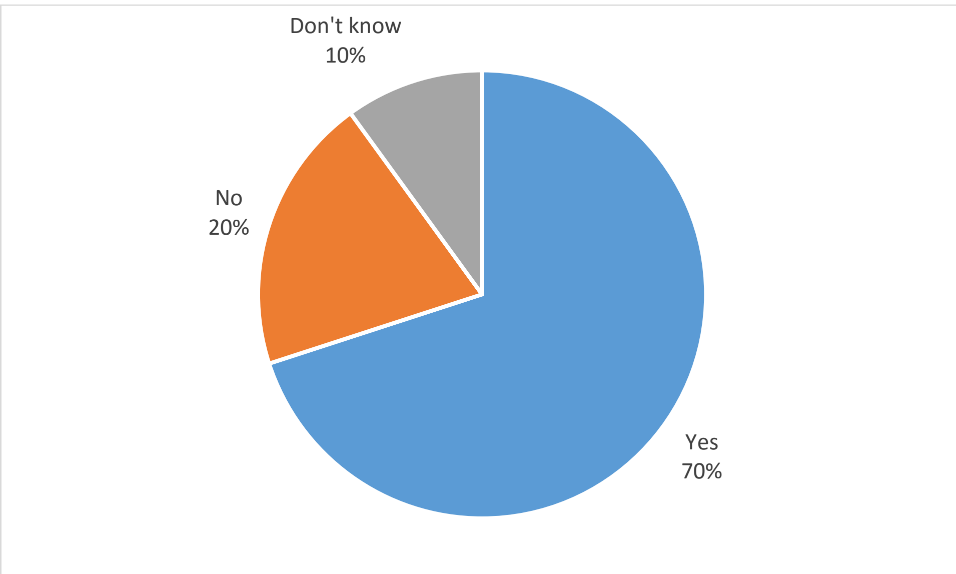
n=9

The majority of providers indicated that all or the majority of their trainees were currently working in a plant operative role in construction.

The only significant difference was one provider who had 85% of their trainees in a plant role but outside of construction. This is not a particularly surprising result given that this was a general construction training provider and the other providers mainly specialised in pant training.

Funding of training

22. Do the employers of individuals receiving your training utilise CITB grant money to subsidise the cost of training?



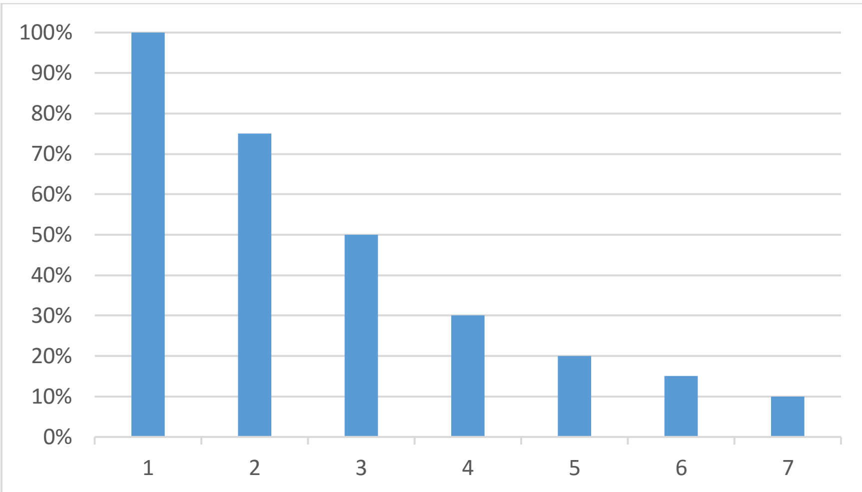
n=10

Seven of the ten providers indicated that the employers they worked with used CITB grant funding to support the cost of training.

It should be noted that CITB Grant for major plant training would be expected to cover the full costs of training as there are specific grants linked to the type of plant - e.g. 360 degree or 180 degree excavators, which can attract up to £2,000 in funding. However, when it comes to smaller plant items the grant is either lower or generic and set at £50 per day.

The levels of CITB grant used to fund training as described by training providers is very close to the levels of CITB grant claims found amongst respondents in the CPA member survey.

23. If Yes, what proportion of training would you say is supported by CITB grants?



n=7

One provider indicated that all of the training delivered for employers was funded with CITB grants, while four providers indicated that less than a third of training was CITB funded. The average across all providers responding to the question was 33%.

Views about the Market for Construction Plant Training

24. How would you describe the market conditions for construction plant operative training specifically?

Eight of the ten respondents answered this question and all cases they indicated that the market conditions for construction plant operative training was 'About the right amount for what we can offer'.

This was true for plant in general and for all types: Cranes, Powered Access Equipment, Earthmoving, Small Equipment & Tools and General Plant.

25. Please say why you feel this way:

When asked why they felt this way, a number of key themes emerged:

Specific plant

- Earth Moving and Materials Handling are the most popular subjects and always have been. We never get calls for skip handlers.

Business

- Always do with more. We also deal with managers, fenestration, memorial masonry, pre-cast concrete, civil engineering.
- Stopped doing CPCS - no marketing help so we couldn't continue. Assessors are getting older.
- Our assessor died. We're replacing him to keep up with demand.

Market

- Nothing dwindling.
- Depends on the market
- That's because the wages are highest.

26. What, if anything, do you believe inhibits demand for training in construction plant occupations?

Three providers commented that that they felt there weren't any inhibitors to demand for construction plant training.

The attractiveness of the occupation driving demand was cited by one provider: "Young people don't want to go out to work. They prefer to be in offices with computers."

Another commented on the cost of training.

27. Please indicate to what extent the following factors are a constraint / barrier to you in delivering construction plant operative training:

Four of the training providers responding to the survey stated that there were significant constraints or barriers to them delivering construction plant operative training. The factors that providers indicated where the most problematic were:

- Costs of land / property to teach in
- Recruitment of good quality trainers and assessors
- Retention of good quality trainers and assessors
- Help with marketing and advertising
- Our relationship with sector federations

The only area where more than one provider had an issue was in relation to delivering training was 'Costs of land / property to teach in'.

Even in those instances where providers were experiencing some constraints, there was little evidence of those providers taking pro-active steps to address these. The only specific example provided was:

- **Retention of good quality trainers and assessors:** You train them up and they leave - earning more as subcontractors. We now have contracted subcontractors exclusive to us.

More general comments included:

- **Recruitment of good quality trainers and assessors:** Can't get CPCS testers part time. The rates are too low. CPCS testers are usually freelance.
- **Costs of land / property to teach in:** Prohibitive. Unable to do anything.
- **Our relationship with sector federations:** CPCS - no single point of contact - buck gets passed. Not user friendly.

The only 'other' example of a constraint / barrier given was:

- We could increase to two test areas but we can't quite make 30x30. We could test more but we have to start tests on time and can't ever bring them forward. So we have a 10 hour day on paper but 3 people on the signaller test. CPCS never listen. There are steering groups for feedback, but they just do what they were going to do in the first place. Not interested in feedback.

29. Have you contacted an industry federation such as the CPA to discuss how these issue / barriers could be addressed?

None of the training providers we spoke to had contacted an industry federation such as the CPA.

We would be interested in exploring this finding in more detail with the CPA to understand if this is in line with your experience / expectations and to understand if there is a desire from the CPA to change this position.

30. How do you think an industry federation such as the CPA could / should be supporting training providers to improve their provision?

While none of the providers had contacted an industry federation, several did have thoughts on how best federation could support them to improve provision:

- **Expansion**: Any help to expand.
- **Money**: It wouldn't hurt if they helped. Discuss alternatives. Give us some money!
- **Training**: People are training who have no experience. They should bring back monitoring of training.
- **CPCS**: An updated system is needed for CPCS with a reminder to refresh qualifications.
- **Voice**: I've no time for it. Who am I? They only listen to people higher up.

Three providers specifically stated that no help was needed.

31. Please describe any future approaches or technologies that you think will become increasingly important in the construction plant sector.

Five providers responded to this question, three positively, one neutral and one more negatively:

Robotics

- Robotic plant is taking off - we're ready and waiting.

Other technology

- Rotational telehandlers. Telehandler and crane all-in-one long term hire.
- GPS is good.

Neutral / negative responses

- We are always moving forward.
- No interest. Our training is generic. Don't think robotic plant will take the place of humans.

n=5

These findings would suggest a relatively "staid and fixed" mentality whereby the providers are not innovative nor ready for new technology. This despite evidence that use of robotics is growing and will continue to do so! If we consider agricultural plant, they have made massive advances with use of GPS and other satellite technology in the last few years and we will explore this further in relation to construction as part of the final report.

Is there an opportunity here for CPA to engage with the major plant manufacturers to create a joint approach for training in use of new technology in site machinery? Going further – is there a greater opportunity for CPA to be at the forefront of testing and evaluating new technology with manufacturers that will be more relevant to actual site and site training needs?

32. How well prepared would you say you currently are to address those future approaches?

Despite there being a number of technologies that would become important in the sector, there was limited evidence of providers being prepared for these. Only two providers indicated they felt prepared for the new technology.

One provider pushed this responsibility to the employer: “Employers have to embrace new technology.”

In addition, one provider had taken steps, but these had not come to fruition: “We were looking into this with CITB but that department was dissolved.”

33. How interested would you be in any of the following types of support from the CPA or its members?

Training providers were presented with a range of possible types of support from the CPA and its members. In general terms, around half of providers were very interested in these types of support:

- Joint working to deliver training
- Support with CPD for tutors and assessors
- Visits to promote construction as a career
- Visits to promote plant operations as a career
- Support to provide materials

Construction and Built Environment Provision and Decision Making

34. Please rank the following factors in order of their importance in your decision-making process about your training:

Four providers indicated that all of the factors were equally important:

- The availability of government funding
- Local demand as described to you by employers you engage with
- The costs associated with delivery
- The availability of capable staff to deliver the training
- The attractiveness of the subject to students

An additional two providers indicated that government funding was the most important factor in their decision making.

The next most important factors were:

- The costs associated with delivery
- The attractiveness of the subject to students

35. If you identified other reasons that were important, please say what those are.

Other factors that providers indicated as being important for their decision making included:

- **Individual choice:** "Why do you want this course" is what we ask. We arrange the right course for the right person.

A number of providers also made comments under this section which appear to reflect their attitudes towards the funding of training more generally:

"Never had government t funding so not missed it. Difficult to find a point of contact. It's all the secret handshake club."

"Our trainers stick with what they know and have years of experience."

36. How (if at all) has your construction training offer changed in the last 5 years?

Half of providers stated there had been no change on their training offer over the last five years.

Of the others, a number of changes were cited in two broad categories:

Shape of provision

- We have got bigger. We have more plant operatives.
- It's a cut-throat market. Some providers put 8 people on a course. We have 4/5. Our prices are higher but we have tried to become competitive. We train them on the slinger or get them the mobile crane card first.
- We were NVQ but have moved into apprenticeships.

Trainers

- Trainers are older. On the positive side, they have had experience.
- Consolidated. All trainers are based here; they don't like to travel.

n=5

37. How (if at all) has your construction plant operative training offer changed in the last 5 years?

Two providers offered examples of how their plant operative offer had changed:

- We've added accreditations and a new location. 80% are CPCS, 5% are NPORS, NVQs are 10-15% and CSCS is done by touch screen.

- Entry levels are too low. Currently you can grab a guy working in a cafe, supervise him for 3 or 4 days and he can then supervise a clinger or crane operative.

38. How (if at all) do you change your approach and training offer for construction in response to funding and policy updates from government and the sector?

The majority of providers responding to this question indicated that they responded to funding and policy changes as required, but could not provide any specific examples of how they had responded or to what changes.

The only specific example provided related to the CPCS:

"The affiliated CPCS card for specialist machines has been massive for us."

39. In particular, have you done any of the following?

Respondents were asked to indicate whether they had already, or had plans to do, a variety of activities relating to innovation and collaboration across the sector.

The most common areas where provides had already undertaken activity were:

- Joint innovation with other providers (4 providers)
- Geographical expansion of our offer (2 providers)
- Closer collaboration with CITB (1 provider)
- Closer collaboration with other federation (1 provider)

The only areas were a provider had said they planned to undertake these activities were:

- Joint innovation with other providers (1 provider)
- Joint innovation with employers (1 provider)

Specific examples given included:

- "Collaborated with NJ Church. We run the training and Church pays. We take on trainees at a lower rate and build their confidence. Also IPAF, which we do with ALS training - it's indoor, which we don't have so we refer it to them."
- Stone masonry training with Wearmouth College.

- DSA FERSA NSAC CITB collaboration.
- We have joint stakeholders who deliver the training we can't.

40. Final comments

“Difficult to get process right on site. Monitors always looking to catch you out. Some hand-holding is needed. In former times the certificate went out with the trainer. Now there is little flexibility and it's too easy to get sanctioned. We anticipate H&S, NVQ and NPORS needs increasing.”

“What is the state of the CITB? Skills were bought by NOCN. Are CPA buying out CPCS?”

“Haven't done any of the above so far. Not sure if going to. I'd love to slog it out with the CPA about how to support proper standards.”

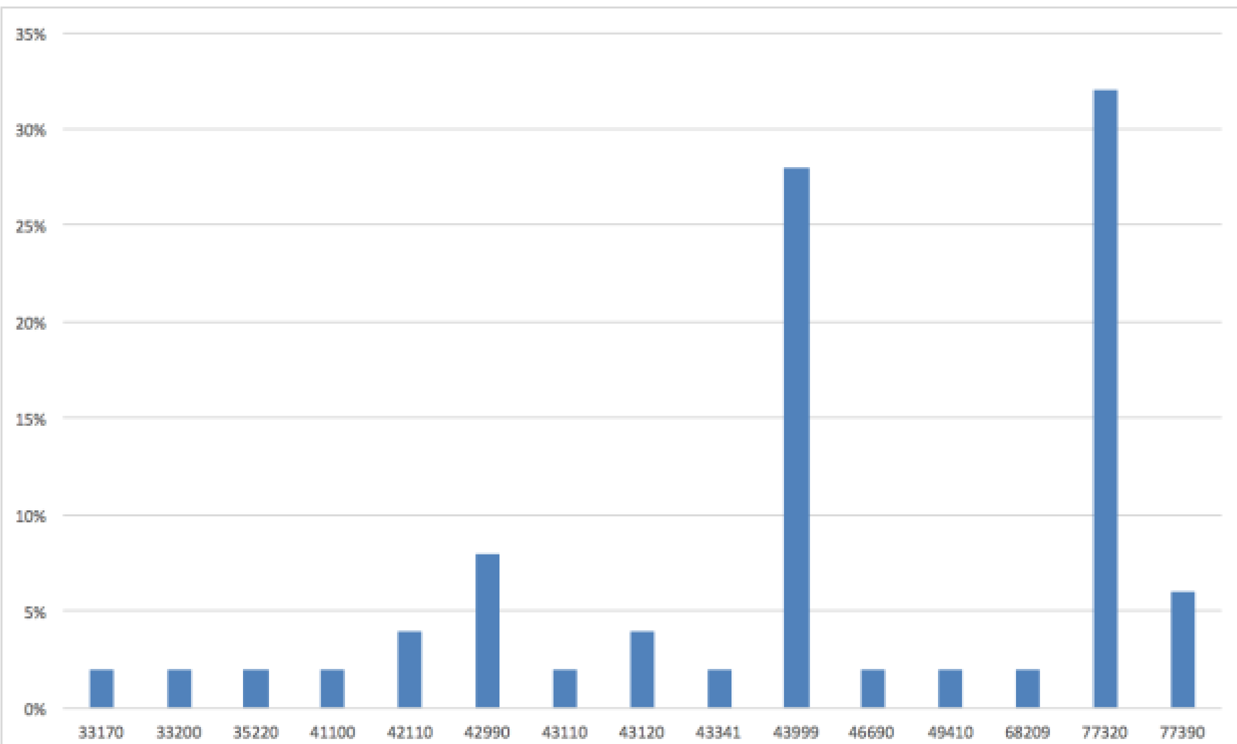
“Cskills were bought out by NOCN. That was good because we can now deliver functional skills. Wondering what the CPCS changes will be. CPCS is expensive. Has to be in a centre. Difficult to make money because of time of work, ratios of tutor to candidates, hiring/buying plant. It's a big barrier.”

“We wouldn't trust people to collaborate with us! Things are pretty static for us. Construction is developing but slowly. It's the government uncertainty. Nobody is reasonable there. They are a set of prawns.”

Appendix A: Breakdown of SIC area of operation

SIC CODE

33170 - Repair and maintenance of transport equipment n.e.c.
33200 - Installation of industrial machinery and equipment
35220 - Distribution and supply of gaseous fuels of all kinds through a system of mains
41100 - Developing building projects for commercial buildings hotels, stores, shopping malls, restaurants
42110 - Construction of roads and motorways
42990 - Construction of other civil engineering projects n.e.c.
43110 – Demolition
43120 – Site preparation
43341 – Painting
43999 - Construction of other civil engineering projects n.e.c.
46690 - Wholesale of other machinery and equipment
49410 – Freight transport by road
68209 - Other letting and operating of own or leased real estate
77320 - Renting and leasing of construction and civil engineering machinery and equipment
77390 - Renting and leasing of other machinery, equipment and tangible goods n.e.c.



n=50

APPENDIX B: Classification of SIC to plant specific member

SIC	Coded	Plant hire specific	% of respondents
33170	Transport repair	No	2%
33200	Installation	No	2%
35220	Gas distribution	No	2%
41100	Construction	No	2%
42110	Construction	No	4%
42990	Construction	No	8%
43110	Demolition	No	2%
43120	Site preparation	No	4%
43341	Painting and decorating	No	2%
43999	Plant hire	Yes	26%
46690	Wholsesale	No	2%
49410	Freight	No	2%
68209	Letting	No	2%
77320	Plant hire	Yes	38%
77390	Plant hire	Yes	2%

APPENDIX C: CPA Subscription Bands

Band	Company Turnover
SB	Less than £150,000
A	Greater than £150,000 but less than £350,000
B	Greater than £350,000 but less than £1.5m
C	Greater than £1.5m but less than £2.5m
D	Greater than £2.5m but less than £5m
E	Greater than £5 but less than £7.5m
F	Greater than £7.5m but less than £15m
G	Greater than £15m
H	Non Plant-hire Corporate Member

APPENDIX D: Federations and Associations

AVETTA

Chartered Institute of Purchasing (CIP)

Civil Engineering Contractors Association (CECA)

Construction Line

Construction Plant-hire Association (CPA)

Fleet Operator Recognition Scheme (FORS)

Freight Transport Association (FTA)

Federation of Small Businesses (FSB)

Hire Association of Europe (HAE)

International Powered Access Federation (IPAF)

National Federation of Demolition Contractors (NFDC)

Prefabricated Access Suppliers' & Manufacturers' Association (PASMA)

Rail Alliance

Rail Plant Association (RPA)

Road Haulage Association (RHA)