CIPHE The Chartered Institute of Plumbing and Heating Engineering

MANIFESTO 2021

ciphe.org.uk

> The CIPHE is uniquely placed to give a voice to the industry, while upholding the interest of the public, on matters that affect the very health and wealth of the nation.

INTRODUCTION

The vision of our first manifesto was to focus parliament on the huge role the engineering community plays in the future success of the United Kingdom. While that focus has not changed, the challenges of a global pandemic caused by Covid-19, has shifted governmental priorities significantly. As a living document, the CIPHE manifesto evolves to encompass the issues of the day. This much expanded manifesto once again seeks to give parliament an insight into how the plumbing and heating industry underpins many key areas of government policy; health, housing, energy, environment and education.

Economically, there are many challenges ahead, including the end of the EU transition period and the global economic effects of the coronavirus pandemic. Add to this the drive for net-zero carbon emissions and the government's Industrial Strategy, and it is clear that we are entering a period of significant technological change. With those in the plumbing and heating industry formerly designated as critical workers, it is obvious the UK is going to need a plethora of skilled, qualified and competent engineers in all disciplines, to achieve its domestic and international aims.

As the professional body for the plumbing and heating industry, and a registered educational charity dedicated to protecting public health, the CIPHE is uniquely placed to give a voice to the industry, while upholding the interest of the public, on matters that affect the very health and wealth of the nation.

To this end, the CIPHE's manifesto outlines the main issues facing the industry and steps that should be taken by government to deliver long-lasting societal benefits. It remains my sincere belief that CIPHE members represent the best of the plumbing and heating industry and, as such, will be extremely well placed to help tackle those issues head-on.

Kevin Wellman

Kevin Wellman
Chief Executive Officer
CIPHE

SAFETY, HEALTH AND WELLBEING OF THE PUBLIC

The plumbing sector underpins the cornerstone of public health, with safe water and sanitation at its very foundation.

LEGIONNAIRES' DISEASE

Legionella bacteria is the cause of the potentially fatal form of pneumonia, which is contracted by inhaling tiny water droplets. With symptoms similar to coronavirus, it has a death rate of around 12% and a seasonal rise in cases from June to October. Crucially, figures from Public Health England show an annual increase in Legionnaires' cases between 2015 and 2018, with a 68% increase over the period peaking at 814. While the number of cases fell in 2019 and again in 2020 due to lockdowns, Legionnaires' disease remains a threat to public health.

With many premises closed due to Covid-19 restrictions, Legionnaires' has posed a particular risk. Outbreaks can be minimised and prevented with vigorous maintenance regimes. It is vital therefore those responsible for water systems understand how to mitigate the risk of legionella, and other water borne contaminants, especially when premises close with little warning and for prolonged periods of time. The public also need to be educated on the risk of legionella in hot tubs and spa baths.

HEALTH RISKS OF POORLY MAINTAINED PLUMBING AND HEATING SYSTEMS

The Local Government Association's 'Healthy homes, healthy lives' report attributes a cost of at least £2.5 billion per year in treating people with illnesses caused by poor air quality, condensation, mould spores and compromised drinking water quality, linked to living in cold, damp and dangerous homes.

SCALDING—PREVENTION IS BETTER THAN CURE

The Health and Safety Executive states around 20 people die from scalding each year and the elderly are five times more likely to receive a fatal burn or scald injury than the general population. Hot bath water continues to be responsible for the highest number of fatal and severe scalding injuries among young children. Nearly 81% of all scald injuries were classed as emergencies from 2019–2020. The Child Accident Prevention Trust calculates it costs £250,000 to treat one severe bath water scald. The British Burn Association puts the total annual cost to the NHS at £20 million.

HEATING SYSTEM CONTACT BURNS

It is all too easy for radiators, towel warmers and central heating pipes to reach temperatures high enough to cause a burn if touched. The NHS Digital Hospital Episode Statistics for England 2019–2020, show that admissions for burn injuries caused via contact with heating appliances, radiators and pipes, rose by 25% from 797 (2018–2019) to 999 admissions (2019–2020).

With us all spending more time in our homes due to coronavirus lockdowns and the tier system, the risk of burns and scalds in the home is rising.

The facts

Seasonal rise in Legionnaires' disease cases from June to October

59% of people admitted to hospital for tap water scalds were either aged over 70 or under 14

From 2019–2020 nearly 88% of heating appliance burn admissions were emergencies

3.6 million households fuel poor

3 million households water poor

8,500 deaths due to cold homes, 20% increase year-on-year

England has on average 15 operational public toilets per 12,500 people

FUEL AND WATER POVERTY

According to government statistics, under the Low Income Low Energy Efficiency (LILEE) measure approximately 16% (3.66 million households) are fuel poor and around 3 million households are unable to pay water bills. Lone parents with dependents make up 18.9% of the fuel poor, with fuel poverty being highest in the private rented sector. Under UK law, Water Companies are not allowed to switch off the water supply to domestic residences, however that does not prevent stressful enforcement actions over unpaid debt. With more people working from home and home schooling due to coronavirus, rates of fuel and water poverty are likely to rise.

PUBLIC TOILETS

With frequent hand washing and safe sanitation vital to stopping the spread of coronavirus, poor access to public toilets poses a growing public health issue. According to the British Toilet Association, pre-lockdown councils in England had on average 15 operational public toilets per 12,500 people. The BBC also found that at least 673 public toilets across the UK have ceased to be maintained by major councils since 2010.

TOILET PLUME

Toilet plume arises when lavatories are flushed. Turbulence from the toilet bowl can enable tiny droplets and aerosol particles to be released into the air. New research has shown these particles can be deposited onto nearby surfaces and stay suspended in the air long enough to be breathed in post-flushing, allowing the possible spread of coronavirus, along with other serious illnesses such as staphylococcus and E. coli.

LEAD POISONING

It is illegal in the UK to use lead solder or lead pipes in plumbing systems used for drinking water. However, lead has been historically used in plumbing systems due to its resistance to corrosion. Therefore, those living in a house built pre-1970 that has never had the pipework replaced, may have lead pipes in their home. Lead poisoning has many symptoms, can be fatal and is particularly high risk for children and pregnant women.

RECOMMENDATIONS

Review, update and strengthen enforcement of the Water Regulations.

Those responsible for water systems need to take action to mitigate the risk of legionella and other water borne contaminants if closed for prolonged periods due to Covid-19.

Introduce further legislation around the installation and use of domestic hot tubs and spa baths.

Introduce legislation requiring the use of Thermostatic Mixing Valves (TMVs) in all domestic dwellings.

Implement a public awareness campaign to reduce the risks of scalding, burns and legionella.

Policies to target the energy efficiency of dwellings in bands G–D.

Tackle issues associated with poverty at source. Ensure those on low incomes pay fair and competitive tariffs for energy use.

Promote schemes to help the water poor. Increase water efficiency in domestic properties and cut water waste.

Ring-fence money for public toilet provision.

Raise awareness of the risks associated with toilet plume.

Further investment into replacing lead pipework within the water industry infrastructure, homes and public buildings such as schools.

ENVIRONMENT

The plumbing and heating sector is key to the environment and will play a huge role in reducing carbon emissions, water waste and climate change.

NET ZERO

To tackle climate change, the UK has a legal commitment to be completely carbon free by 2050. That means the gas, oil and coal currently used to heat our buildings must be replaced with low carbon fuels or technologies. There are approximately 40 million buildings to de-carbonize. The government's Ten Point Plan for a Green Industrial Revolution has pledged to implement the Future Home Standard in the shortest possible timeline, extend the Green Homes Grant for another year and aims to set out the Heat and Buildings Strategy in 2021. Financially, the transition will be supported largely by private investment, not public funds. Currently, the industry does not hold the knowledge or skills for a neat transition to a low carbon economy. Supported by industry, CIPHE has developed a low carbon training course, it is hoped that government will endorse this training provision.

INFRASTRUCTURE

To reach net zero, the UK's energy infrastructure will have to undergo huge change. The gas network will need to be adapted to carry hydrogen, district heating systems will be rolled out via a Heat Network Transformation Programme – which will implement local authority zoning by 2025 – and there will need to be a widescale switch to electrically powered systems using heat pump technology. The hydrogen network is not due to be trialled at scale (in limited areas) until 2023. Technology wise, heat pump production will need to increase significantly to reach demand, however, it is not due to rise to 600,000 units per year until 2028.

NEW HOMES—FUTURE HOME STANDARD

The Future Home Standard is due to come into play from 2025 – though the current government has said it may push for earlier – meaning that gas central heating appliances in all new build properties will be banned. New build houses will therefore require an alternative heating source such as a heat pump or hydrogen powered boiler.

EXISTING PROPERTIES

Existing properties will not be affected by the Future Homes Standard legislation and are expected to be able to use gas boilers for the foreseeable future. However, the government wants as many existing homes as possible to hit EPC Band C by 2035, where practical, cost-effective and affordable. Almost 27 million existing homes need to be adapted for a clean energy future.

TRAINING AND INSTALLER AWARENESS

Fossil fuels have been the mainstay of the heating industry for generations, so the practical implications of retraining an entire industry are huge. Approximately 100,000 heating engineers will need to up-skill to design, install and maintain either hydrogen powered boilers or heat pump technology.

The facts

UK carbon emissions must drop to zero by 2050

Future Home Standard to come into force by 2025

90% of homes in England currently use fossil fuels for heating, cooking and hot water

100,000 heating engineers to be retrained to install systems based on low-carbon heat sources

66% of existing homes are at Energy Performance Certificate D or worse

Daily domestic water consumption needs to drop from 140 litres per person to less than 100 litres

29% of people globally have no access to safely managed drinking water

CONSUMER EDUCATION PROGRAMME

The public will need to become familiar with new regulations and technologies. Consumers will need to make informed decisions on their heating and hot water systems on the path to net zero. In particular, the vulnerable, elderly and disabled need protection from incompetent or rogue traders, and those who would mis-sell new systems.

WATER EFFICIENCY

Water shortages will hit the UK within the next 25 years. While water companies need to make greater progress in managing and reducing waste in their own supply network, we all have a responsibility to cut water waste in our homes. The average person will have to reduce their consumption from 140 litres of water a day to 100 litres, to have a meaningful impact on future shortages.

ESCAPE OF WATER

The RISC Authority states that the cost of escape of water claims to the insurance sector has increased to over £1.6bn per annum. Most losses are a consequence of bad workmanship, resulting in poor installations. With water damage just as devastating as that of fire, reducing escape of water claims will not only help the environment, but also ensure properties are safe and habitable.

GLOBAL WATER CHALLENGE

According to the UN, billions of people are still living without safe water. There are households, schools, workplaces, farms and factories struggling to survive and thrive. In particular, marginalised groups – women, children, refugees, indigenous peoples, disabled people etc. – are overlooked or face discrimination, as they try to access and manage the safe water they need.

RECOMMENDATIONS

Government must maximise the expertise of installer organisations, manufacturers and industry bodies to tackle the timescales and practicalities of transitioning to low carbon heating. CIPHE's low carbon training course should be recognised by government.

Adequate public funding to support private investment in net zero.

The transition to low carbon heating requires a well funded, fit for purpose, training and education programme, built by the industry, for the industry.

Easy identification of those engineers who have undertaken industry recognised training in low carbon technologies.

The public need to understand the aims and objectives of net zero and how it will affect their homes and businesses.

Water conservation must be made a priority by the government.

Water Companies need to increase resources dedicated to fixing leaks and reducing waste.

A sustained campaign should be introduced to change consumer attitudes towards water conservation and increase knowledge of schemes such as the Unified Water Label.

Government support and investment to be increased in environmentally targeted projects, including conservation and harvesting of water.

EDUCATION

Those working in the industry require a fit-for-purpose education system to attain industry-recognised qualifications and learn the skills and knowledge vital to their roles.

THE IMPACT OF COVID-19 ON FURTHER EDUCATION (FE)

The issues faced by education providers due to Covid-19 have been severe. Apprenticeship starts have collapsed, income has been lost and many colleges have battled technological issues, with a high number of FE students unable to access online learning. Colleges have had to adapt instantly to government guidance, taking on the burden of additional costs for PPE and cleaning, alongside rolling out whole scale Covid-19 testing of students and staff. The impact of coronavirus on student (and staff) mental health and wellbeing is high. In addition, FE institutions have reported significant skills gaps from those entering in 2020/21, due to the time lost in education during the initial lockdown. The effects of coronavirus on the education landscape will last for years to come.

APPRENTICESHIPS

In England, Trailblazer Apprenticeships are a step in the right direction for the plumbing and heating industry, with a Level 3 equivalent qualification at its core. It is important to ensure that they remain 'fit for purpose' through regular review by all relevant stakeholders. From 1 August 2020, all new apprenticeship starts had be on the new, employer-designed Standards. However, demand for apprenticeships continues to outstrip supply of employers. The UK domestic plumbing and heating industry is predominantly made up of sole traders and micro-SMEs of five individuals or fewer, who need more support in taking on an apprentice. This same issue is likely to affect T-Levels when it comes to offering work placements to students.

FUNDING

Following the introduction of the Apprenticeship Levy in 2017 apprenticeship starts had already fallen by a fifth by 2019. Additionally, the imbalance of funding available to the Plumbing and Domestic Heating Technician Trailblazer apprenticeship (compared to other subjects) had started to impact negatively on the industry. At a time when gas as a heat source is being replaced as a part of government strategy, gas apprenticeships funding is disproportionate when compared against other routes.

While the CIPHE welcomed moves to allow non-levy paying businesses (SMEs/micro-SMEs) access the apprenticeship service from 2020, and enhanced financial support via the Levy transfer – the ability for apprenticeship levy payers to transfer up to 25% of their levy pot to smaller businesses – the pandemic has ensured this has had little impact on the plumbing and heating sector.

ROGUE TRAINING PROVIDERS

It takes up to four years to qualify under the plumbing and domestic heating technician trailblazer apprenticeship at Level 3. However, Covid-19 has caused an economic climate that is ripe for rogue trainers and fast-track courses. With whole sectors, such as hospitality, closed due to coronavirus there are many people looking to retrain. For the adult learner, ploughing redundancy payments or life-savings into a career in an industry with critical worker status, seems like a sound investment. However, not all training providers or courses are equal.

The facts

85% of those operating in the industry work in companies of fewer than five individuals

Apprenticeship starts have fallen by 70% among 16 to 18-year-olds from 2019-2020

60% of the total fall in employment from August-October 2020 was among 16 to 24-year-olds

UK unemployment rate rose to 4.9% from August-October 2020, with 370,000 people made redundant – the largest annual fall in employment for a decade

Complaints against rogue training providers are rising. These types of courses will often come from private companies and promise qualifications in weeks, or months, claiming to condense quality learning into small timeframes. Training providers may offer classroom-based learning or home study courses that fit in around current commitments. Unfortunately, most learners realise their mistake after their fees have been paid and find their 'qualification' is not recognised by the industry. For consumers, rogue training providers pose a risk to public health. Inadequate training providers and courses lead to poorly trained tradespeople, who may unwittingly put others health, homes and businesses at risk.

POST-QUALIFICATION CPD REGULATION

Continuing Professional Development (CPD) plays a vital role in up-skilling the workforce and keeping them up to date with the latest best practice and regulatory/technological advances. Without regular, high quality CPD, engineers fall behind their peers. However, as the industry is largely unregulated, there is no obligation for those outside of CIPHE membership, or Engineering Council registration, to engage in, or record, CPD.

EXPERIENCED WORKER RECOGNITION

There are many in the industry who hold 'grandfather rights' – individuals with great skill and experience, but no formal qualifications. These engineers have a lot to offer the industry, however they are increasingly becoming marginalized. Changes to the CSCS scheme mean that the 60,000 holding industry accredited CSCS cards, will no longer qualify for them by 31 December 2024. This will effectively block a number of skilled workers from UK construction sites from 2025.

RECOMMENDATIONS

Further support for employers of Covid-19 hit businesses to keep on apprentices.

Further reform of the Apprenticeship Levy and funding.

Funding for apprenticeships to be targeted at the anticipated future construction industry skills gap and to support the move to net zero.

An urgent review of the Plumbing and Domestic Heating Technician trailblazer to make sure that it is meeting the needs of industry employers.

Additional help for those experiencing the Covid-19 related skills gap for those starting apprenticeships in the 2020/21 and 2021/22.

While T Levels have the potential to open the industry up to a wider range of backgrounds and skills, they fail to provide a clear pathway to employment in the plumbing and heating industry.

Introduce more incentivised provision for employers to engage trainees in on the job learning opportunities.

Further practical and financial support for sole traders and SMEs.

Practical and financial support of adult learners.

Crack down on rogue training providers.

Provide an achievable alternative route to recognition for experienced workers.

REGULATION, LICENSING AND INDUSTRY ISSUES

The UK plumbing and heating industry is largely unregulated, meaning anyone can give themselves the title of 'plumber' regardless of qualifications, knowledge and competence.

CRITICAL WORKER STATUS

The pandemic has seen those in the plumbing and heating industry given critical worker status. Engineers have stepped up as frontline workers, from providing emergency plumbing and heating services during the initial lockdown, to working on wider engineering projects such as setting up the Nightingale hospitals. With construction seen as key to the economy, it was one of the first industries encouraged to come back into full operation. At present, engineers can continue to work in people's homes through all tiers and during national lockdowns, in a Covid-19-secure manner.

While recognition of the importance of the plumbing and heating industry is welcomed, access to PPE, fast and accurate Coronavirus testing, and clear and concise government guidance has been a challenge. The impact of local lockdowns on how engineers work and the availability of professionals to the public due to self-isolating or the need to shield, is an ongoing concern.

LICENCE TO PRACTISE

The CIPHE maintains accessible lists of qualified installers in plumbing, heating and renewables for the public benefit. However, the lack of publicised enforcement of Water, Building and Gas Safety Regulations is exacerbated by the fact that, with the exception of gas installers, anyone can establish a plumbing and heating business regardless of relevant and supporting qualifications. This has left space for a small, but undesirable rogue operator culture to arise, placing public safety, health and welfare at risk. The UK now sees more deaths each year due to poorly designed, installed and maintained plumbing systems than deaths caused by carbon monoxide poisoning.

WATER REGULATIONS/ GREATER ENFORCEMENT

UK legislation is commonplace within the plumbing and heating industry through Building Regulations, Gas Safety Regulations and Water Regulations. While compliance with Water Regulations (Byelaws in Scotland) is required, there is generally a risk-based approach to inspection and enforcement. This results in enforcement being weak, with little evidence of resulting prosecutions due to contravention.

The facts

Plumbing and heating engineers designated as critical workers during the pandemic

Over 150,000 individuals are engaged in the UK plumbing and heating industry

More people killed annually by poorly designed, installed and maintained plumbing systems than gas appliances

Over £1.6bn paid out by insurers per annum for 'escape of water' claims

Existing shadow economy in counterfeit parts likely to expand with supply chain issues related to Covid-19 and the end of the EU transition period

SUPPLY CHAIN SHORTAGES

Supply chain issues have plagued the construction industry throughout the pandemic. To make matters worse, Britain's ports were put under enormous pressure at the end of 2020, with businesses replenishing stock after the end of the November lockdown and building stockpiles before the end of the Brexit transition period on 31 December.

Many engineers have slipped through the net of government financial support during the pandemic. They will be facing the added frustration and financial pressure of jobs cancelled due to a lack of supplies and price hikes in line with the costs of shipping. With online marketplaces still not legally responsible for stopping dangerous products from being sold, the CIPHE is concerned the current situation will leave the floodgates open for counterfeit goods.

MINIMISING THE SHADOW ECONOMY

An influx of counterfeit parts – especially in the heating industry – is putting the public safety at risk. Counterfeit parts are often made from inferior materials, will not have passed the vigorous testing and approvals process of genuine parts and rarely conform to European safety standards. Installation of non-genuine parts has consequences for everyone, from the installer (who is legally liable) to the public. Counterfeit parts may be unreliable, may not fit correctly or cause a system damage. In the case of a heating appliance, a catastrophic failure may lead to injury or death.

PROPERTY SYSTEMS HEALTH CHECK

With fuel poverty, water poverty, the shadow economy, skills shortages and a lack of enforced regulation causing big problems in the industry, the CIPHE proposes to introduce a compliance health check. The health check will be similar to an MOT and will encourage consumers to have regular inspections of their plumbing and heating systems; this should prevent problems before they occur and ensure systems are working as efficiently and safely as possible.

RECOMMENDATIONS

Vigorously enforce Water Regulations, Gas Safety Regulations and Building Regulations with prosecutions and heavy penalties for those who do not comply.

Increase links between regulation enforcement and grass roots engineers.

Ensure critical workers have access to PPE, fast and accurate Coronavirus testing, clear and concise government guidance and financial support.

Recognise the skilled and professional part of the workforce. Protect the tile of 'plumber' by introducing statutory licensing of plumbing and heating engineers.

Introduce an evidence based mandatory and relevant CPD requirement for those operating in the plumbing and heating industry.

Further policing of the shadow economy to stop the trade in non-compliant parts.

Introduce a plumbing and heating system health check for homeowners and landlords. Prevention is better than cure for systems too.

PROUD TO BE A PROFESSIONAL

Founded in 1906, the Chartered Institute of Plumbing and Heating Engineering is the professional body for the UK plumbing and heating industry. A membership of over 7000 individuals is made up of practitioners, consultants, specifiers, designers, public health engineers, lecturers, trainers and trainees.

OUR AIMS AND OBJECTIVES

Public safety & health

To benefit and educate the public worldwide by:

- Defining and monitoring professional standards
- Compiling and publishing a list of competent persons
- Co-operating with professional, research and educational bodies.

Research

To promote study, research and publication by:

- Encouraging research groups in building engineering services
- Supporting technical advances within the industry
- Publishing research and development papers.

Education

To further education of the profession, worldwide by:

- Advocating technical training programmes with colleges and the industry
- Publishing and selling technical guidance, and supporting new and emerging technologies
- A commitment to lifelong learning and continued professional development in a rapidly evolving environment.

Membership

To support members and grow membership by:

- Setting basic standards and enabling progression through higher professional development
- Assisting with career development from traineeships and apprenticeships to Chartered Engineers
- Encouragement to achieve recognition through Apprentice, Journeyman and Master Plumber Awards, Engineering Council registration, and career goals through CPD attainment.

The Chartered Institute of Plumbing and Heating Engineering

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