

Imperial College
London

ESTATES OPERATIONS

PEOPLE PLACES SPACES

August 2021

Standing proud

Preserving the
Queen's Tower

Inside ▶

One life, one day
Powering Imperial
Long-servers



Welcome

I have been on campus many times over the last few weeks, and it felt good to be back. The visits gave me time to pause and reflect; another academic year over with so many great achievements from Estates Operations – had they been celebrated, or had they gone unnoticed?

Without doubt, we have witnessed the continued strength and resilience of everyone in Estates Operations as the pandemic has gone on and on, in and out of lockdown, and the differing challenges you have faced whether on campus or off. Has visibility and awareness of the essential workers in our department diminished outside of Estates? It certainly hasn't in my consciousness.

Each one of you has delivered over and above your 'day job' and Imperial Expectations.

Without singling out, but to highlight some of the sterling work, there has, for example, been the ceaseless facilities management and projects delivery activity, including White City, the tireless work of the Maintenance teams (including preparing for the new maintenance contracts), Soft Services working on the new food waste processor, and the ongoing work of our Engineering, Environment and Energy team (more about their work on p12).

Learning and Development Officer Angela Williams has brought our training online, so all staff can access Estates specific training to aid their development, and our Communications Officer Jan Carberry has worked hard to keep us connected and showcase our successes.



We've welcomed some new Estates family: Anna Talletti, Kirsty Scallan, Tom Louvre and Natalie Cain; bid farewell to others: Sean Fanning, Richard Farish, Britannia Mcleod, Fiaz Karim Rodriguez, Gary Lloyd, Angela Dorman, Yanna Petter – and adieu to Sam Tolhurst who has transferred within College. I'm also pleased to welcome the Stores Logistics Team into Estates; and excited that two new apprentices are joining us soon – you can read more on p16.

While we're in a transition period now, consulting on how we enable the best post-pandemic working; I've no doubt that the coming year will be as equally challenging as the last.

I personally remain immensely proud of Estates Operations Team, and I hope you share in that pride – you ought to! Enjoy the summer,

Nick Roalfe

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Alternative format

This magazine is available as a downloadable PDF on our website at: <https://www.imperial.ac.uk/estates-facilities>



EstatesCommunications@imperial.ac.uk



020 7594 8326

Win a gift voucher

Take part in our easy to enter quiz for a chance to win one of three vouchers worth £50, £25, and £10.

Q1: When did AccessAble carry out the first full survey of the College?

Q2: Name our energy utilities bureau?

Q3: How did Mark Curley start his career with Imperial?

To enter, email your answers to:

EstatesCommunications@imperial.ac.uk by Friday 27

August 2021.

The winners will be the first three names drawn from correct entries. The judge's decision is final.

Answers to the April quiz:

Q1: From where has concentric wiring been removed? Blackett laboratory

Q2: How many questions are there in the EMR? 312

Q3: What is Mike Kent's volunteer role? Champion of Health & Safety within the Maintenance team.

Winners:

Natalie Cain, Anne-Marie Clarke, Julie Neville.



Congrats to Seacourt

The company that prints this magazine, Seacourt, based in Oxford, has received The Queen's Award for Enterprise: Sustainable Development 2021.

It is the fourth time they have received the highest UK official award for business.

They have also received the accolade of Highest scoring B Corporation printer in the world 2020. B Corp is a business certification that they meet the highest standards of verified social and environmental performance, public transparency, and legal accountability to balance profit and purpose.

Commenting on the Queen's Award Gareth Dinnage, Managing Director, said: "Seacourt is proof that companies can act responsibly and prosper. This award cements our ambition to continually strive to do more for society and the planet."

Contract update

All change in Maintenance

There's a big welcome to two companies, **Salisbury Group and Inviron** who from **1 August** took over the maintenance service contract previously delivered by Spie. Two new companies, but the message from Head of Maintenance Rak Patel is: "We are one team."

A decision was made to split the service delivery into two as the contract came up for renewal.

Hard Maintenance Services to Academic Buildings are being delivered by Inviron and by Salisbury Group to Residences & Move Imperial Buildings. Lead-in mobilisation began in June, with some staff transferred to the new contracts under TUPE legislation.

As part of the tender process bidders presented to representatives of the Estates Maintenance. Rak Patel said: "We were impressed with both Inviron and Salisbury and their understanding of our service needs and business demands throughout the tender process."

"We believe both service providers will deliver the service levels we are looking for, and feel the transferring team will be working for a company which empowers them to make a difference."

Inviron is one of the largest technical services companies in the UK and Ireland, with other universities in its portfolio including Lincoln, Birmingham City and Warwick.

Salisbury is one of the UK's leading providers of facilities services and provides services including facilities management, engineering maintenance, security services and cleaning services at many important and iconic landmark sites, and for well-known organisations including Carpetright, FedEx, PDSA, Civil Aviation Authority.

Salisbury is currently supporting Silwood Park campus maintenance on an interim basis, until a contract decision is made this month (August).

Noel Clancy, Managing Director Imtech Inviron said: "Our Guiding Principles will help us deliver a better experience for Imperial College London and we are looking forward to building a mutually beneficial partnership over the coming years."

Adam Burden, Director of Operations at Salisbury Group, said: "Salisbury Group is delighted to be working with Imperial College London. We have a unique approach – that's why "We take it personally" is our motto."



“YOU NEED A THICK SKIN”

One life, one day - Paul Felton

Estates Operations Quality Assurance Manager Paul Felton was recently nominated for a President's award for his sterling but often unnoticed work supporting the development of projects on all campuses. He is a previous recipient of the Estates Employee of the Quarter award.

Paul is beyond proud to work for Imperial College London. Everything it is and stands for is a reason why, “The history, the lovely buildings, the Royal Charter, the way it has contributed to the world,” writes Jan Carberry.

Paul, who has the slightly dry sounding job title, Quality Assurance Manager, Technical Compliance, first came to Imperial in 2013. It may sound dry, but the job is far from it. At any one time he has a list of projects he is involved with as long as your arm, and as they say, no two days are ever the same. There are only a few buildings across the whole estate he has never worked on, and as he says: “I never, ever get bored.”

On the day in May that we meet he was juggling six projects. He's already been in meetings and sorting out questions for four of them that morning and would be turning his attention to the other

two later that afternoon.

One of them was for the latest stage of an ongoing change to the campus at Silwood Park. The nuclear reactor that was there has finally been completely decommissioned and demolished, while the Manor House has been sold and so the infrastructure is being separated.

Know how

Next stages were being planned for mid-June, which included using a ‘mole’ computerised digger to bore essential service channels, instead of using the traditional ‘cut and cover’ method for the trenches needed. This would enable long runs with no breaks and be more suitable for awkward navigation around the existing structures.

Paul's technical knowledge and reliability for sound thinking and judgement are acquired through 48 years in the industry. He is well-known amongst his

immediate colleagues, but perhaps less so, and accordingly the value he brings to College, beyond Estates. Although he didn't secure a President's Award this time around, hopefully his nomination and that of his Projects Delivery colleagues will raise awareness of his and their work across College.

Paul gives a good explanation of what that value means: “You may have what is called a scope gap in a project, say for example, it is delivered 95% in scope. That could sound good, but it's what that 5% represents that's important – it could be the paint colour, or a material, but what if it's a missing wall?”

It's exactly what he is there for, making sure that everything is done properly, carefully and any decisions for changes are ones that he and ultimately Estates and the College can stand by.

He said: “It can be a lonely job, you have to have a thick skin, but

I hope I've never let anyone down.”

As a young man growing up in west London Paul joined the St John Ambulance, an organisation which opened the door on a whole wealth of experiences he might otherwise never have had, including attending Princess Anne's wedding at Westminster Abbey, escorting the arriving Ugandan Asians at Heathrow following their expulsion from their country, and sadly a pop concert where a young woman died in a crush.

Apprenticeship

He took a five-year indentured apprenticeship route into the industry, gaining a Diploma in Environmental Engineering, and learned Heating, Ventilation and Engineering controls. Later at Imperial he went back to the classroom taking an NEC 3 Supervisor qualification. “At the time I was worried about it, it was a challenge for me.”

He and wife Terry have been together for 38 years. Terry subscribes to the “if you can't beat them, join them,” school of thought, and decided to embrace Paul's love of model railways which he's had since a boy. “She tolerates my mess and had to put up with a few board sections of our 44ft long layout in our home for over a month.” She has also gone on to win competitions in her own right.

As well as being the former Chairman and now President of the G Scale Society in the UK, Paul has interests in Heritage Railway Groups; The Bluebell Railway; The Romney, Hythe & Dymchurch Railway in Sussex and Kent.

But he's not being allowed to retire from Imperial and indulge his hobbies just yet. Although his technical retirement date is this month (August), he's staying for another two years, mainly to oversee the completion of the School of Public Health (building G) at White City. This will then wrap-up his long involvement with the development of the White City North Campus with Building C; D; E; & F, as well as elements of the main Services Infrastructure.

Something Paul is very keen to do in his remaining time at Imperial is to mentor and pass on his experience and knowledge: “If I can help anyone, I will.”

Learning and development



September sees the launch of the Estates Operations Learning, Development and Wellbeing website hosted through SharePoint.

This ‘one-stop shop’ will bring together local and college-wide information and resources into a central location, so you can take control of your own learning and development with support, guidance and coaching from your line managers. As well as the training programmes you will also be able to find information on eLearning, career development, wellbeing and much more. No more trawling through the College website, find everything you need at your fingertips!

Look out for the launch details in the weekly newsletter.

Just some of the training options available for Estates staff in the coming months are listed below.

All are online through Teams, unless otherwise stated.

● Estates Forum

08 September, 13.30-15.00
16 December, 10.30 - 12.00

● HR surgery update

21 September, 10.00 -11.00

● Virtual Lunch & Learn: WaterAid UK

05 October, 12.00 - 13.00

● Personal Review and Development Plans (PRDP) for Managers and Supervisors training and refresher

29 September
12 October
10 November
all at 09.30 - 12.00

● Records Management and Building Resources

21 October, 09:30-10:45
9 December, 09:30-10:45

● Virtual Lunch & Learn: Building Energy Management System (BEMS)

11 November, 12.00-13.00

● Asbestos Awareness

12 October,
24 November,
both 09.30 - 11.00

● Iosh Working with Environmental Responsibilities

17 November, 09.00-17.00

If you want to know about any training or sponsorship available please contact [Angela Williams](#).



Clocking up the years

A close-up on Mark Curley, Maintenance Technical Plumber, who celebrates his 35 year milestone with the College in September

been decommissioned and the site fully cleared, and the Manor House and land around it sold. "I can't believe it's been as long as it has", says Mark, "I can remember that first day as if it were only yesterday."

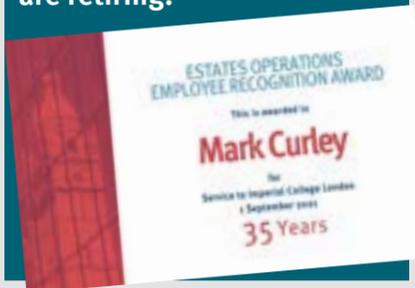
Mark originally joined on a government scheme known as the Youth Training Scheme (YTS). After a year Imperial took him on as an apprentice and he spent three years working towards his City & Guilds qualification as a plumber and technical plumber. At that time there was a full in-house crew of electricians, carpenters, decorators, gardeners, and drivers who would call on him to lend a hand. Of course, this meant he could expand on his skills learning from them alongside his own trade from the two plumbers who were teaching him.

Imperial College took over Silwood Park and Ashurst, Berkshire, in 1947 as a Field Station to provide a site for research and teaching in those aspects of Biology not well suited for the main London campus. At that time there were many 'temporary' single-storey huts, a legacy from Silwood Park's second world war role as a military hospital and convalescent home.

In 1985 when 16-year-old Mark Curley walked through the gates for his first day at work many of those buildings were still in place. In the 36 years since there have been many changes, buildings have been erected, demolished, and sold.

Most recently the 1960s built nuclear reactor has

The Estates Operations Long Servers Recognition Scheme celebrates those serving, 10, 15, 20, 25, 30, 35, 40 or more years, and those who are retiring.



Mark said: "I love it here, it's a close-knit community, every day is different, that's probably why I've never noticed time passing." The 16-year-old Mark used to walk - bus - walk to work, from home in Windsor, then he got a cycle, then a motorbike. These days the 52-year-old Mark makes the 25-minute car journey from his home in Maidenhead.

It's a scenic drive, and of course it is to what is still a scenic site, although he mourns some of the features that have disappeared over time, the

Japanese Gardens, the Victorian greenhouses, the flowers that were grown there to be sent to up to London to the South Kensington campus, the weddings, and many parties and occasions that would be held in the Manor House.

For Mark some of the best parts of the job have been the variety of people he has met. He recalls one winter when a party of overseas students who experienced the joy of seeing snow for the first time in their lives. "But they didn't like being in the cold too long" he laughs.

He also feels proud to be part of an institution with such a global reach. "I was on holiday one year in the Dominican Republic on a day excursion when I got chatting to a bloke who was working on his laptop. He turned out to be a professor who had been at Imperial recently to deliver seminars."

And the worst parts of the job? "There aren't any really, things like blocked drains are just what I do, nothing bothers me, I really enjoy it, otherwise I wouldn't have been here this long." He quips, "I guess I'm institutionalised."



Employees of the Quarter

There are three Employee of the Quarter recipients this time around, who each receive a certificate and £100 gift voucher reward for exceeding Imperial Expectations.

Peter Bodi, Assistant Building Manager, Building Operations
Nominated by Martin Benson for:



- relationship building
- sharing knowledge and expertise from his Soft Services background to useful effect
- consideration of others.

"He has shown a willingness to work beyond the normal criteria by voluntarily attending out of hours, both physically and virtually and has arranged a regular and successful exchange of ideas and developing issues."

Alyson Brewer, Estates Records and Archives Officer
Nominated by Shauna Murphy to recognise her proactive cross-team engagement activity.



"She proposed and established the Estates Operations Information Meeting recognising the advantage of bringing different knowledge holders in Estates Operations together to share information that would be useful to all teams. She also uses this forum to develop ideas across the teams, and for making improvement to keep colleagues informed and up to date on technology and ICT issues, and of course record management."

John Field, Head of Fire Safety
Nominated by Jon Ryan.



- He said: "John has:
- looked at improvements to achieve our team workload
 - listened and encouraged his team with respect and understanding
 - communicated clearly and precisely with everyone
 - listened to our considerations, views and, opinions
 - problem solved with positive outcomes
 - identified areas where he is weaker, improved those weaknesses and encouraged his team to do the same.
 - organised to best prioritise his own work and the work of his team, especially with the increase of recent workload."



25 years
Sangita Kerai
Health & Safety Advisor

10 years

Steven Brown
Maintenance Technician, Leading Hand, 1 November



15 years

Ana De Almeida Ramos,
Supervisor, Soft Services, 13 September (left)

Lyudmyla Brenetska Supervisor,
Soft Services, 1 December (right)



20 years

Antonio Correia Parrado, Soft Services Supervisor, 22 August



Returning from maternity leave

Two colleagues, Patrice Davenport-Forde and Aimée Buirski talk about having babies during COVID and the experience of coming back to work post lockdown

some of my family have still to meet Amelie

in person.”

It was the first time she had taken maternity leave at Imperial – she is in her fourth year with College working part-time, 21 hours over three days a week – and wasn’t sure what to expect.

Teams work

However, staying connected with her team through the year was an upside of COVID-19. She said: “Teams became a ‘thing’ so team meetings became more regular, from once a month to weekly, so it was easy for me to ‘pop my head in’ every so often. It was beneficial for me, and the team could meet Amelie. To be honest, if it wasn’t for that I probably wouldn’t have been in touch until Keep in Touch

(KIT) days much closer to my return date.”

Patrice is a Customer Services Advisor in the Customer Services Team and returning to work meant remaining at home to work, and with all her plans for long term childcare still unresolved.

“If I will be working from home permanently then I will be looking for childcare closer to home, but if I’m returning to campus, I would be thinking of a place at the Early Years Centre at South Kensington.” She is keen though to return to campus for at least part of her working week, to be in different surroundings and have adult conversations, and fortunately being part-time she will get to enjoy some of those activities she missed out on during her maternity leave.

Patrice Davenport-Forde returned from maternity leave having taken a year which began almost exactly with the first national COVID-19 lockdown last March.

Although this was Patrice’s third child, her other children are aged 12 and five, this experience of motherhood was totally different to any experience before because of the pandemic.

She said: “Part of the enjoyment of a new-born is sharing that; meeting with others. During lockdown baby groups, health visiting, face-to-face support were all done away with. I understood the need why, but it was hard.”

“Everything I was looking forward to was flipped on it’s head. Even

Family friendly

College has a range of family friendly policies and benefits which are designed to help support a healthy work life balance which in some instances enhanced above statutory offers. Full details can be found on the [College website](#).

Maternity leave

All pregnant staff are entitled to reasonable time off for appointments and up to 52 weeks’ maternity leave regardless of length of service and must take a minimum of 2 weeks maternity leave. Entitlement to paid maternity leave is dependent on length of service by the expected week of birth.

Shared Parental Leave (SPL)

SPL provides eligible parents with the opportunity to choose to share between them the care of their child during the first year following the child’s birth.

Parents have the option of converting their maternity leave and pay into SPL and pay and sharing the remaining period of leave and pay between them.

SPL is available to parents who meet the employment and earnings eligibility requirements.

For further information please see the SPL policy.

Paternity leave

You can take up to two weeks leave in a single block of one or two consecutive weeks.

Adoption/surrogacy leave

Adoption/surrogacy leave is available to one member of a couple who jointly adopt. The other member of the couple is entitled to paternity/maternity support leave. Both may also be eligible for SPL Adoption Leave if they meet the criteria.

The story is similar for Aimée Buirski, although the lockdown had begun before the Assistant Buildings Manager started her maternity leave.

For her because of the restrictions, many of the pre-natal visits for appointments and scans she had to attend alone, losing out on some of the joy of that shared experience with husband Marc.

Just as Patrice experienced, that out and about time that is so much part of being on maternity leave was also impacted. “We did a lot of walking, it was a way of seeing people, and getting out. But I was feeding Eli myself, and in the winter it is hard to be outside and try and feed your baby.”

Technology helped, lots of video calls to family and friends, places laid at the table with a tablet to create virtual shared mealtimes.

And, just like Patrice who had her other children home while the schools were closed, she also had her first child Georgie at home, with the added challenge that entailed.

Aimée has had both children since joining Imperial and is appreciative of the family-friendly policies of the College. They were a factor in deciding to take the job, but she laughs, “I never expected to be making use of them quite so soon”. She became pregnant with Georgie in 2017, a year after joining.

She did find she was able to put work aside during her leave, yet was equally able to start gearing up with her KIT days before her return in June after her year of maternity leave. She’s working a compressed week, five days in four, two on and two off campus on a trial basis. “I need that ‘normalcy’ with the opportunity to still enjoy some of the ‘being a mum things’ I missed out on during lockdown.”



HAPPY FAMILIES
TOP LEFT: PATRICE, WITH AMELIE, AVA, MATT AND THAI-LI
PHOTO ABOVE: AIMÉE, GEORGIE, MARC, AND ELI

Spending pennies on accessibility

Works of around £23k were completed in the spring to improve accessibility features across many parts of the Imperial estate.

The money was spent on ‘small things’ but they are small things that can have the biggest impact.

Efforts concentrated on improving alarms, beacons and fitments within accessible toilets, all those at Ethos had up-to-date alarms, beacons and signalling installed; shelves, hooks, towel dispensers and such like were fitted to toilets across many areas, including the medical campuses. Additionally, the Central Library disabled parking bays were repainted.

The first full survey of the College Estate was carried out in 2012, and further ones either full or partial, or where things have changed since 2018. They are conducted by the organisation AccessAble to compile accessibility guides for anyone on or planning a visit to our campuses.

Assistant Building Manager Maggie Taylor, who represents Estates at Imperial’s Disability Action Committee became the Department Disability Officer and leads the ongoing relationship with AccessAble. Following the most recent resurvey she seized the chance to make improvements that were identified.

In 2018 most of the estate was resurveyed, including buildings at White City and residences for the first time. In 2019 a Lunch and Learn launch was held to raise awareness of the scheme and the surveys. A further contract was signed for resurveys of 20% of the estate each year for three years. The 2020 surveys were carried out just before the pandemic. Year two of the resurveys are now underway.

The [AccessAble](#) guide is on our website.



MAGGIE TAYLOR WITH NICK ROALFE AT THE ACCESSABLE LUNCH AND LEARN

Preserving the Queen's Tower

The 135-year-old Queen's Tower is currently fenced off and out of bounds to the public. Getting the tower fit for the next 135 or more years is a major undertaking. Peter Thompson is the Project Manager from Estates currently working with consultants on this challenge.

COVER STORY

When a piece of stone fell from near the top cornice of the tower in 2020, repairing and preserving this historic and much-loved symbol of Imperial College was without question. Because of the heritage it represents, it is far from straightforward.

A potted history

The Queen's Tower, which was Grade II listed in 1970, is the last surviving element of the original Imperial Institute building designed by Thomas E. Colcutt and constructed between 1887-1893 in the eclectic Renaissance manner. It is built of Portland Stone with brick bands and topped with a copper dome. Alterations were made in the 1960s to stabilise the tower as a freestanding structure, following the demolition of the main body of the Imperial Institute building, originally opened by Queen Victoria in 1893.

The story of how the Institute came about and the



history of the land on which it was built in South Kensington is a fascinating and lengthy story, which you can read about on the [College website](#).

The works to make the tower freestanding were carried out between 1966 and 1968 with the remainder of the Institute being demolished by 1967. The tower has been unaltered since the structural works in the 1960s, when the plinth and steps were added.

The Queen's Tower is of high-quality design and is generally well-maintained, but given the complexity and cost of achieving safe access to

the upper levels of the tower, it makes good practical and economic sense to use the opportunity to carry out general repair and refurbish works to the 84m high tower at the same time. Repairs will be sympathetic, using matching materials throughout. There is discussion with the planning authority, Kensington and Chelsea, as to whether it will be possible to use suitable modern materials in some areas to reduce further future maintenance.

The proposed works to repair and refurbish are:

- Replacement new natural copper sheet to the 16.5m tall copper dome



- Replacement of lead flashings to various cornices at different levels

- Cleaning of existing brick and stonework in selected locations
- Isolated repairs to both brick and stonework including the replacement and repointing of damaged brickwork and isolated repointing, indent repairs, joint pining and replacement stones to the stonework
- Replacement of existing highly weathered and eroded timber louvres from the upper openings
- Replacement of the waterproofing renders at balcony levels
- Replacement of broken window panes
- Repairing the finial; removing this, bringing it to ground level for inspection and repair as necessary Regilding the repaired base metal and relocating this on top.

PHOTOS: TOP LEFT, INSPECTING THE TOWER, LEFT, CRUMBLING STONE, ABOVE THE COPPER AND HOLE

Events so far



BRITISH GEOLOGICAL SURVEY

The BGS report takes us through three stages:

1. Detailed examination,
 2. Comparison with stone samples held in the BGS collection, and
 3. Identifying a close match that is currently available.
- Although it has not been possible to identify the quarry source of the Portland Stone used, there is a close match.
 - This is Portland Stone that is an appropriate shade of white and with relatively low shell content of the Basebed variety. Two operational stone quarries in Portland have been identified, and of these one is recommended.
 - The next stage is to obtain samples of two or three types of stone for comparison with the existing stonework.



Powering Imperial

Head of Engineering, Energy and Environment, Andy Hammond, and Energy Manager Andrew Caldwell explain behind the scenes actions to improve our carbon footprint, reduce energy use, and meet our consumption needs sustainably



South Kensington campus houses one of the largest Combined Heat and Power stations (CHP) in London.

CHP is the simultaneous generation of useful heat and electricity, and the heat is a by-product of electricity generation. The electricity generated is used to power the buildings on the campus via a large 'private wire' high voltage network located in the tunnels beneath the campus, the heat generated is distributed around the campus via two heat networks; one steam based, the other water.

The College first installed CHP at South Kensington in 1999, this system operated until 2015 when it was replaced with a newer, more efficient system the same

year. The CHP system is located under Electrical and Electronic Engineering (EEE) and consists of five main components: two Jenbacher J624 gas CHP engines (4.5MWe each), two waste heat & gas fired combination boilers and one gas fired only boiler, each boiler is circa 12MW total thermal output. These assets, ancillary equipment and immediate area where they are located is often referred to as the 'energy centre'.

In 2019 the electricity demand for South Kensington campus was 76GWh of which 82% was generated on site in the energy centre, the remainder imported from the national grid. 38GWh of useful heat was recovered from the process of electricity generation and utilised within the buildings at South Kensington.

Heat is recovered from the CHP engines via two methods; one is 'extracting' the heat from the engine exhausts, the system does this by routing the exhaust gases through the combination steam boilers. The other method is to recover the heat from the water that cools the engine, much in the same way as a car cabin heater uses heat from an engine cooling system to heat it.

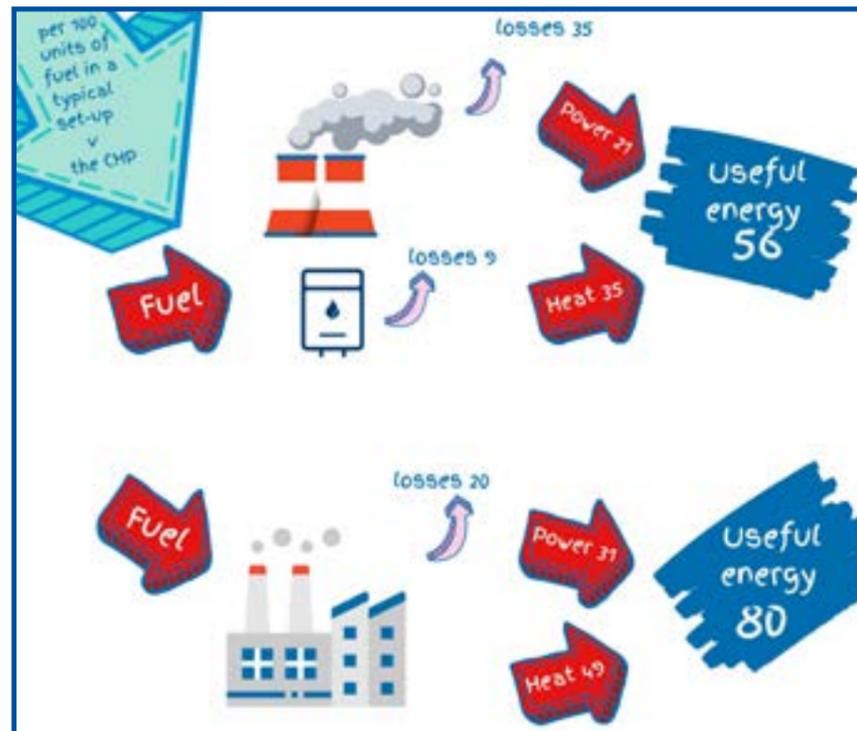
Quality ranking

Along with high levels of plant availability this makes the College's CHP extremely efficient, so much so it achieves a CHP Quality Index (QI) of over 101 in the Government's CHP Quality Assurance scheme.

In 2019 the CHP system saved more than £6.6m in utility costs and saved more than 3500 tonnes in carbon emissions. Emissions from the energy centre are regulated by an Environment Agency Permit.

The CHP system and heat networks are being continuously improved. The long-term strategy is to retire the steam heat network and steam generation plant and move those heat loads to the water district heat network. This involves not only upgrading a lot of plant in buildings but also the water district heat network itself needs to be replaced in some places to support these new loads.

Another opportunity for improvement is better utilisation of waste heat. During the winter as buildings require a lot of heating it's easy to utilise all the



PHOTOS: TOP LEFT: CLOSE UP IN THE COMBINED HEAT AND POWER PLANT, BOTTOM LEFT: ENERGY MADE SIMPLE ABOVE: STUDENTS TAKE A TOUR OF THE ENERGY CENTRE

'waste' heat, however in the summer and (to a lesser degree) spring and autumn not all the waste heat can be utilised. There has been significant investment in improving and expanding the water heat network also replacing end-of-life local gas fired boilers with new connections to the heat network, thus utilising more waste heat and burning less gas to deliver the same heat.

In 2020 works continued in line with this strategy, several local gas fired boilers on the roof of Bessemer and Royal School of Mines were replaced with new district heat connections, also migrating City and Guilds building's five steam power hot water generators to a water-based system. The end of life heating system in 170 Queen's Gate was replaced and the building made ready for a new district heat connection in the future.

Works will continue in the coming years to migrate away from steam and ultimately replace the steam generation systems with more efficient hot water heat recovery units.

Buying our fuel and making savings

In March 2021, the Suez Canal was blocked for six days after the grounding of Ever Given, a large container ship.

At one point there were 369 ships stuck in a tailback either side of the blockage waiting to pass through the 120-mile canal - a shipping short cut saving around nine days sailing around the Cape of Good Hope.

About 12% of global trade, around one million barrels of oil and roughly 8% of liquefied natural gas pass through the canal each day.

Before the accident, global shipping was already facing disruptions caused by the COVID-19 pandemic, and since the cost of freight has increased, increasing the costs of anything imported either by ship or air.

This is just one example of factors which affect the cost of fuel, which, along with everything else, is traded as a commodity.

Others include:

- Global demand, currently the far east is procuring gas instead of coal
- Global uncertainty – conflicts or natural disasters in countries that produce oil or gas
- Reduced gas storage facilities in the UK
- Colder than usual seasons
- Reduced wind

- Carbon tax increases.

The Imperial College budget for 2021/22 compared to 2020/21 has increased by £2.4m, not because of increased consumption, but as a direct result of increased commodity and non-commodity costs.

College uses a utilities bureau service provider, Energy Intelligence Centre (EIC). When they began working with us in 2015 it was agreed that the trading strategy should focus on providing a level of budget certainty, whilst offering the opportunity to make savings. As a result a budget protection strategy was implemented.

Through EIC virtually 100% of our 2021/22 energy has been procured, which has protected us from further increases. Based on recent energy trading figures this relates to a saving of circa £3.8m.

Fuel saving actions



Autoclaves are used for the pressurised steam sterilisation of objects, and killing of harmful bacteria, fungi, viruses and spores and they are classified for different levels of cleaning.

They have a life expectancy, with technology advancing all the time and improving their capabilities and efficiency.

William Frame was the Project Manager of a three-phase £1m autoclave replacement programme which has provided seven new ones in two buildings, for both 'CL2' and 'CL3' waste categories. The project kicked-off in October 2017 and completed in March 2020.

There were seven autoclaves in the Sir Alexander Fleming (SAF) building and three in the Sir Ernst Chain (SEC) building. Those in SAF were installed 20 years ago. They were costing around £100k per year in servicing and repair and using excessive amounts of electricity and water compared to a modern equivalent.

Technical Operations Manager Allison Hunter proposed the replacement of three of the autoclaves in SAF with four new ones and to remove the others. This would instantly reduce costs.

MG Partnership were appointed as the Mechanical and Electrical Consultant and Mortimer Isaacs as the Cost Consultant for a feasibility study to establish what new services would be required and which existing services could be retained.

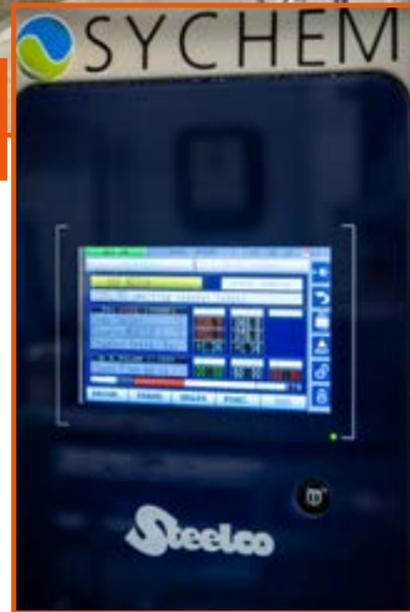
College confirmed that the central steam supply that was being used to feed the existing autoclaves in SEC would be phased out, and the new autoclaves would need to be steam self-generating, so an increased electricity supply would be needed.

Full steam ahead!

New cost-efficient autoclaves installed



PHOTOS: ABOVE THE NEW AUTOCLAVES AND RIGHT, CLOSE-UP OF THE CONTROL PANEL



The existing autoclave room in SAF basement housed two autoclaves, the study confirmed it could house three new ones.

Design stages followed, which highlighted the need to upgrade the electrical supply to both areas and that the existing soft water supply in SAF would need to be extended into the autoclave room and a new soft water system would need to be installed within the SEC building, along with additional steam venting in both buildings to accommodate steam self-generation.

During the tender process the autoclave managers visited many locations to review and witness autoclaves in use that had been supplied and installed by the companies on the tender list. These visits enabled the autoclave managers to discuss the performance of the autoclaves with the users.

The contract to supply, install and service the seven new autoclaves

was awarded to Sychem Ltd and Alpine Works Ltd the contract for the installation of the required mechanical and electrical services and for the refurbishment of the rooms. With the two tender processes being completed the project cost plan could be fully updated and College funding was sought and approved.

While the autoclaves were on order the services were installed. A three-phase programme ensured autoclave services were available throughout the works.

British Heart Foundation

● We support this national charity by encouraging students leaving residences to donate reusable items. Recycling points year round are at: Watts Way, South Kensington, Woodward Buildings, basement car park, Silwood Park, recycling



Reduce, reuse, recycle, repeat

A guide to College approved schemes to use and support

Better Reuse

● **Better Reuse** provide an environmentally-friendly service that diverts redundant furniture, fittings and equipment from disposal putting them back to use. Collected products are diverted to charity partners who resell or upcycle products for community benefit and provide training and placements to individuals looking to up-skill by refurbishing or repairing furniture.

Felix project

● The west London based charity rescues surplus food from the food industry and other suppliers. Volunteers sort and safely deliver it to almost 1,000 charities, social kitchens, day centres, primary schools and holiday programmes to help feed local communities. As a result people who would otherwise go hungry have delicious, healthy meals. During the pandemic Felix also delivered to the emergency food hubs helping the isolated and sick.



At the end of term those in student facing and residential buildings can help by encouraging students to donate non-perishable foods that they would otherwise leave behind.

Warp It

● **Warp It (Waste Action Reuse Portal)** is a redistribution network, which works in a similar way to Ebay or Freecycle but for organisations rather than individuals.

Warp It makes it easy for departments to give away, loan or claim items unwanted by others within the College, the organisation and beyond. Items which can currently be reused include furniture, stationery and unused printer cartridges. It is not possible at present to offer electrical items.

Using Warp It helps to:

- Reduce purchasing costs — the new owner of the transferred resource does not have to purchase new equipment.
- Increase recycling — if the equipment or resource is to be scrapped Warp It acts as a waste management system, diverting to recycling or refurbishment.
- Reduce carbon emissions — the new owner does not need to purchase new items, and so reduces emissions associated with manufacture and transport.

The system is easy to use, to use the scheme you need to register at: warp-it.co.uk/company/imperial.

Electrical items

● For information on how to dispose of electrical items, and more about waste disposal, visit the [waste disposal web pages](#).

Holidays, celebrations, diversity days and events

● Remembrance of the Slave Trade & Abolition	23 August	● Dyslexia Awareness Week	4 - 10 October
● Grief Awareness Day	30 August	● World Sight Day	14 October
● Rosh Hashanah	6 - 8 September	● Diwali	4 November
● International Week of the Deaf	21 - 28 September	● Disability History Month	22 Nov - 22 Dec

You're hired! New apprentices

Two new apprentice posts have been created in the Maintenance Team, headed by Rak Patel.

Advertising for the roles attracted a large number of candidates, of which 11 were shortlisted by Maintenance Managers Ian Day and Herbie Lewis and Apprenticeship Manager Ailish Harikae.

The two stage selection process is now underway. Stage one is a 30 minute online interview, giving the candidate the opportunity to tell and evidence to the panel something they have made or a project they have been involved in. The second stage is a 30 minute assessment, tour of the Hammersmith campus and interview, by the panel of Herbie Lewis, fellow Maintenance Manager Allan Webb and Ailish Harikae.

Ailish Harikae has provided College funding for laptops and toolkits to support the successful candidates training.

Apprentices will undertake a series of placements across different Maintenance teams and campuses, developing a range of skills, with key training areas including:

- health and safety

- cold and hot water systems
- heating systems
- electrical systems
- drainage and waste systems
- ventilation
- air pressure cascade supporting research laboratories
- fume cupboards



They will have work placements and will also gain hands-on experience with other teams in Estates Operations, including Project Delivery, Energy & Environment, and Engineering, plus shadowing opportunities with some of our contractors.

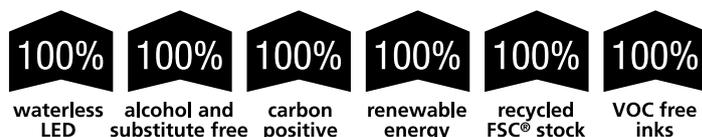
Apprentices will spend one day each week undertaking a special programme of off-the-job training provided by Choice Training, based in Dagenham, and work towards the Level 3 Building Services Engineering Service and Maintenance Engineer apprenticeship standard.

Sustainability Statement

This magazine has been produced using methods which support our values on sustainability. It is printed on 100% FSC certified recycled paper, using 100% waterless offset printing which is 100% alcohol / VOC free. It has been produced in a carbon positive factory, using 100% renewable energy, with zero waste to landfill.

Imperial College London Estates Operations is committed to the environment.

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