Coal Fired Computers

300,000,000 Computers - 318,000 Black Lungs

YoHa

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A one-hundred year old, 35-ton showman's steam engine powers a computer with 1.5 tons of coal. Black lungs inflate every time a database record of miners' lung disease is shown on the computer monitors. It feels like you've been invited into a fun fair, but one where the rides log their own accidents – a fun fair run by people who long ago became indistinct from the machines they maintain.

Burrell 6NHP showman's road locomotive 'Excelsior' owned by Graham Atkinson

Over three days at the Discovery Museum, with groups of miner activists, Coal Fired Computers articulates relations between Power, Art and Media. A new work by leading UK media artists Harwood and Yokokoji (YoHa), in collaboration with Jean Demars, it responds to the displacement of coal production to distant lands like India and China after the UK miners' strike in 1984/85.

Coal Fired Computers reflects on the complexities of our global fossil fuel reliance and especially on how coal transforms our health as we have transformed it. Today coal produces 42% of the world's electricity, and in many countries this rate is much higher (more than 70% in India and China). This power is produced by descendants of Charles Parson's 1884 steam turbines, also on display in the Discovery Museum.

It could be said that coal dust gets into everything. Sealed into the lungs of miners, it forms visible blue streaks like veins of coal. According to the World Health Organisation, 318,000 deaths occur annually from chronic bronchitis and emphysema caused by exposure to coal dust. The common perception is that wealthy countries have put this all behind them, displacing coal dust into the lungs of unrecorded, unknown miners in distant lands, coal returning into our lives in the form of cheap and apparently clean goods we consume.

Coal fired energy not only powers our computers here in the UK, but is integral to the production of the 300,000,000 computers made each year. 81% of the energy used in a computer's life cycle is expended in the manufacturing process, now taking place in countries with high levels of coal consumption. The UK currently produces less that one third of the coal it uses, importing the majority of it and therefore displacing 150,000 tons of coal dust into unknown lungs.

Coal Fired Computers brings together these disparate elements into an artwork, allowing us to reflect on the complexities that have created and maintained power, the crisis of fuelling that power and its subsequent health residues.

Steam Powered Search:

The 19th century's great engines of change vented coal-fed steam. This was a society that rested on its mines; its products dominated life and determined its inventions and transport infrastructure. In this way the coal mines of England recursively transformed the bodies of those who touched them and redirected large parts of its society to feed its machines.

In 1825 the steam engine escaped from the mine and spread out across the landscape, applying itself to transportation. By 1840 the Great Western Railway Engines demanded that the landscape be compressed into manageable chunks of aligned timetables. This was the first time all the cities in the UK used the same time zone, helping coordinate their bodies into mass labour. The mines transformed the body as the body transformed the mine, feeding lungs into the hungry boilers of empire.

For millennium a message could only travel as fast as it could be physically transported. Out of the social turmoil of the French Revolution and Dolland's invention of the telescope in 1758, the Chappe brothers were able to build in 1791 a visual semaphore system that could carry Napoleon's messages at speeds over 400 miles an hour. This began to loosen the link between communication and transport, a link which finally broke on 25 July 1837 somewhere between Euston terminus and Camden Town Station, London, where Cooke and Wheatstone installed their invention of the electrical telegraph for the North Western Railway.

When the conceptual engine of the telegraph collided with electrical generation and the railway, it enabled new engines to encode thought into wires and surround the planet. In May 1853, aided by the steam ship Monarch, England was for the first time connected to The Netherlands in an information network. In 1865-1866 the world's largest steamship, SS Great Eastern, laid the first working transatlantic submarine telegraph cable. These cables soon criss-crossed the world, re-compressing the

ocean's trade winds into global markets, realigning trade and production into the rows and columns of the bookkeeper's ledger.

The conceptual machines of the 19th Century unfold into our everyday lives, building away from the dusty world of miners underground. Computers trivialise our experience into their databases, as the internet supersedes the telegraph.

The proposed Netherlands Coal Fired Power Station in Eemshaven will supply power through steam turbines to its biggest customer on site, a new Google Data Center.

Overwhelming information circulating the world in wires, compressed into databases, fuels our perpetual crisis: ecological, economic and social. As we approach the nadir of the 19th Century's triumphant globalism, we set the controls of our drifting iceberg of market economy to the heart of ecological self-destruct. We spend our remaining moments forming fictions out of the authority derived from the comparison of database records. We then panic at what is absent from the Oracle of our predictive models and, as the ice melts, create control systems not as blunt instruments of authority but as relentless conceptual machines of software cultures that monitor crisis as they create it.

Art in this context becomes a calming anaesthetic, warmly suffusing our social bodies, blunting the convulsions as everything goes critical. Art fills the gaps of economic Darwinism's lack of imagination - a cheap panacea for social inclusion, economic regeneration, health inequalities and the maintenance of an unfair world.
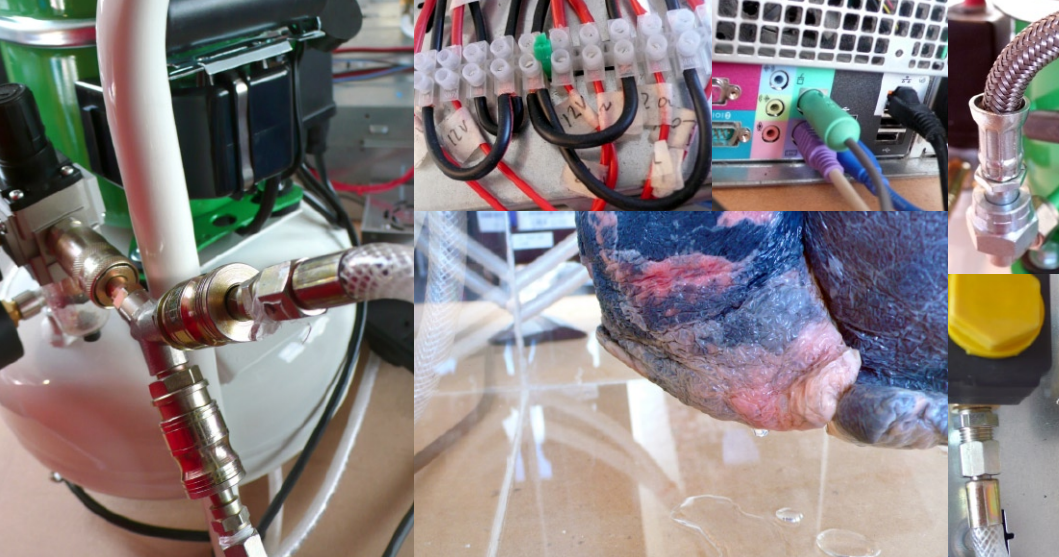
Datasets Used:

English, Welsh, Scottish Statistics for Chronic Obstructive Pulmonary Disease
Department of Energy and Climate Change. published May 2009. URN 09D/305RES

In 1996 British Coal (BC) was taken to court under two separate litigations. In 1997, BC was found negligent in relation to Vibration White Finger and in 1998 for lung diseases.
Each High Court judgement set "dates of guilty knowledge". For respiratory disease it was 4 June 1954 in England and Wales and 4 June 1949 in Scotland. After this date, British Coal should have been aware of the risks and should have taken steps to protect its employees against coal dust, fumes, and vibration, but didn't. Around 762,000 claimants have been registered in the UK for both schemes and it is estimated that the UK Government will eventually spend around £7bn in total.
http://www.decc.gov.uk/en/content/cms/what_we_do/consumers/coal_health/publications/publications.aspx

Mining Accidents/Disasters: The Coalmining History – Resource Centre

Raleys Solicitors - specialists in workplace accident and disease compensation -UK database of over 164,000 records containing the details of coalmining accidents and deaths in the UK from 1600 to the present day. Some names are shown as "Withheld" - this is for reasons of Data Protection and relates to all records of people injured since 1950. http://www.cmhrc.co.uk

Burrell 6NHP showman's road locomotive 'Excelsior'

This engine was built for Robert Payne, a well-known Yorkshire showman, in 1921. The steam-powered road-going 'locomotive' was designed to provide power and transport for traveling fairs. A dynamo was fitted, which was used to generate electricity. After serving in the Second World War, It went through renovation and toured around the country since then.

YoHa: Graham Harwood and Matsuko Yokokoji (YoHa, the Japanese word for 'aftermath') have lived and worked together since 1994. YoHa's graphic vision and technical tinkering have powered several celebrated collaborations including. Harwood and Yokokoji's co-founding of the artists group Mongrel (1996-2007) specialising in digital media and established the Mediashed, a free-media lab in Southend-on-sea (2005-2008). In 2008 they joined long time collaborator, Richard Wright to produce *Tantalum Memorial* winning the Transmediale first prize for 2009. *Tantalum Memorial* also featured at ZeroOne Biennial - USA, Manifesta07 - Italy, Science Museum London, University of Plymouth and TAP Southend - UK, UKS - Norway, Ars Electronica - Austria, Plug.in - Switzerland, Laboral Centro - Spain.

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The UK Miners' strike (1984-1985)

In 1984, the National Coal Board announced the closure of 20 mines. Twenty thousand jobs would be lost, and many communities in the north of England and Wales would lose their primary source of employment. Although not widely known at the time, the Thatcher government had prepared against a repeat of the effective 1974 industrial action (which brought down the Heath government) by stock-piling coal, converting some power stations to burn petroleum, and recruiting fleets of road haulers to transport coal.

Miners elated at the news from Arthur Scargill on the 6th floor that there will be no ballot.
Photographed by Peter Arkell

Sensitive to the impact of the proposed closures in their own areas, miners in various coal fields began strike action. On 5 March 1984, action was prompted by the further announcement that five pits were to be subject to "accelerated closure" within just five weeks. On 12 March 1984, Arthur Scargill, president of the National Union of Mineworkers, declared that the strikes were to be a national strike. Those who went on strike were working people who put themselves through long days of hard work, for which they got poorly paid. Despite the hardship, the miners upheld a strong sense of community, pride and loyalty, often built around the life of the pit. But when they confronted the State over questions of governance and livelihood, the forces of repression were unleashed against them.

This is a critical point in UK political history at which neoliberalism and globalization started to dominate national politics. Thatcher crushed the strike and the unions with it after qualifying them as the 'enemy within' in an 80's civil street war. Thatcher argued that the strike was 'an attempt to substitute the rule of the mob for the rule of law'. But the State was the mob, imposing the "rule of law" through police violence, imposing its will on the people affected by its decision, without in anyway considering their lives and those of their communities, reducing them to economic data, re-planting disease elsewhere whilst creating new social ills over here. The miners' strike officially ended on the 3rd March 1985, leaving bitter miners in disarray. On that day, Marilyn Johnson, one of the women supporting the strike through community organising bought a bottle of champagne. Twenty-five years later, she is still waiting. 'I will pop that cork on the day Margaret Thatcher dies', she says. By 1994, the National Coal Board was privatized, became UK Coal plc and operated only a few mines in the UK, outsourcing most of its activities abroad.

Coal Health Compensation Scheme

In 1998, the Labour Government accepted liability for injuries to coalminer's health caused by Chronic Obstructive Pulmonary Disease, after 12 years of legal action,

the longest and most expensive legal claim in the world. Rather than dealing with the NUM or directly with the miners concerned, Blair's government opted to establish the Coal Health Compensation Scheme with an alliance of lawyers, who would end up ripping most benefits out of the operation. They deducted 25% from victims, even from the £2,000 interim payment granted to miners with a prima-facie case. For COPD cases, the basic fee averaged between £1,700 and £2,300. The average solicitor's fee was £1,920, out of the total £3,200 cost of administering a COPD claim.

In the meantime, a few lawyers firms ranked as top earners in their profession. Avalon's Andrew Nulty took home profits of £13 million in 2006, making him Britain's highest-earning lawyer. He was branded a 'disgrace to the profession' by the Solicitors Disciplinary Tribunal and suspended from his functions. The following year, Jim Beresford from Beresford Solicitors overtook Nulty's rank by earning £16.8m. When the scheme was at its peak, between 2003 and 2005, Raleys' annual profits rose from £2.5 million to £15.7million. During this period, two partners, Ian Firth and David Barber, made personal profits of £9.9 million and £7.2 million respectively. They were found guilty of misconduct and ordered to repay those who would put in refund claims. Whilst the Law Society did prosecute some lawyers over fees irregularities and ordered to repay some of the millions made in the process, no question was ever asked about the structural inequalities of the process undertaken by Blair's government, which clearly benefited lawyers and administrators over the miners, who lost their health for the nation.

Mining Communities Today

Twenty five years on, the strike is not a distant memory for many communities but a day-to-day reality in post-coal Britain. A number of groups involved in the strike and its consequences participate in Coal Fired Computers through a mixture of books, talks, audio-visual installations, union stall and post-strike campaign:

National Union of Mineworkers: represents and supports miners and their families. The Union was successful in bringing about the biggest common law damages claim in history for thousands of miners affected by lung disease. http://www.num.org.uk/

Dave Douglass (ex-Miner/Activist/Writer): worked as a miner in the coalfields of Durham and South Yorkshire and was NUM branch delegate for Hatfield colliery (1979-1994). He then opened the Miners Community Advice Centre. He will be presenting his third autobiographic volume 'Ghost Dancers', a comprehensive history of the strike and the fate of union and communities since then. djdouglass@hotmail.co.uk

SEAM (Save Easington Area Mines): Heather Wood and Marilyn Johnson were amongst those women standing beside their men, empowering women to take a public role in a community with a male-dominated sphere. Their Free Café, feeding up to 500 at a time, was documented by Keith Pattison. http://www.keithpattison.com/

Peter Arkell (Photographer/activist): Peter Arkell was a News Line photographer during the strike, recording the events which took place on the streets of mining communities across Britain. Today, he is a leading member of A World to Win. www.peterarkellphotos.co.uk / www.aworldtowin.net

Amber Collective: is a film & photography collective based in Newcastle upon Tyne, committed to a long-term engagement with working class and marginalized communities in the North of England. Politically engaged, but never aligned, Amber has produced a number of features around Coal mining communities. www.amber-online.com

Pin the Pits: is a campaign devoted to placing former coalmines back on the map, but also looking into the consequences of economic change since the 1980s; and how this has affected young working class identity today. pinthepits@gmail.com

Shoveling coal from the face to the furnace –
Smoke spews - Spitting blood.
Stoking boilers, steam under pressure,
venting turbines – current becomes power.

Coal Production:
China 2,380 million tons, 6000 known miners dead, 70,000 new cases of lung disease a year,
USA 1,053 million tons, 28 known miners dead, 30,000 new cases of lung disease a year,
India 492.95 million tons, Unknown miners dead, Unknown cases of lung disease.

Computers jolt into life, crash and reboot, volts flickering,
Flowing through the logic gates of promise: Lung disease, pneumoconiosis, white finger.

Coal dust everywhere.
Open wounds of the past present,
compressed into our white goods - trapped in the soot of our chimneys,
fired into our processors.

Infected computers speak of compensation (UK).
Miners Total Claims: 592,000,
Live: 241,000,
Deceased: 351,000
Claims settled: 581,000
Administration Costs: £2.3 billion
Including £1.3 billion for claimants legal fees.
Miner average claim £3,000.

Coal dust blows east to China and south to India,
setting the earth on fire with its blackness, children grovel over slag, trading food for pneumoconiosis.

500,000 people die each year of coal related lung disease with many of those remaining invisible to
the database machines they fuel, caught up in the routine atrocity of producing our computers and
powering them. Each computer takes over 250 Kg of fossil fuel to produce. Our way of life consumes
bodies; lungs turn black, bones - malformed to feed the machine, muscles ripped and brains bludgeoned
as we progress and develop, to a destination that never comes.

We need the nameless poor to die for us, moving on from slave labour to factories to deregulated
enterprises. Slaves were branded, recorded, numbered, classified and priced; today, most Chinese and
Indian mine workers never enter into our ledgers and databases. Their underground and invisible labour
is the lifeblood of a free-market economy where nameless bodies are no more value than the coal dust
that enters their lungs.

Stoke the boiler