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Energy saving construction

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Note

from the editor

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I have to apologise for a delay in the production of this issue of CLR-News, but I expect that we can compensate this delay by bringing out two issues in a row before the summer break.

The reasons for this hiccup are manifold. First of all, it has been a very busy spring-time; secondly, we had to deal with a variety of items and files related to labour relations and finally some of the European policy files that we followed through the years came more or less to a political end (social clauses in public procurement, the enforcement directive for posting of workers). Most of the results need more in-depth analysis and it still will take some time before we can publish something about the impact.

The central theme of this issue is closely connected to the themes that were discussed at an EFBWW-workshop in November 2013, dedicated to 'sustainable building'. During a two-days meeting, union representatives and works councils' members active in some of the largest contrac-

tors discussed the complicated change that is needed in the industry with the convergence to a more environmental-friendly industry. In the workshop this notion was broadened up by using the definition of the sustainable company as developed in an ETUI-project, in the meantime published in two volumes. A sustainable company is in that view a company that combines social and environmental goals with long-term investment. And in such company a balance of interests has to be found between different stakeholders like the owners, the management, the workforce, the local and regional community and dependent suppliers and subcontractors. The concept has been elaborated as an alternative to the ideology of shareholder-thinking that has had such disastrous social consequences in recent years.

However, to develop an alternative vision is one thing, to implement such a vision in an industry that has to a certain extent very traditional working methods and a workforce that is mainly fit for that traditional way of producing is

another. The input of different speakers at the workshop led to very interesting debates among the participants and we thought that there was enough material for an issue of CLR-News.

Therefore it was also self-evident to ask Colin Gleeson, the keynote speaker at the workshop, to act as the sub-editor of this issue. If we look at the result of his work, the outcome is broader than just a stock-taking of the themes that were discussed during the workshop. He comes up with reflections on the gap between design and performance that start with the technical aspects. But his contribution makes clear that even a knowledgeable and skilled site workforce must operate within the context of the industry where detailed design and project management are critical factors. A further complication that will influence the production process is the contract of employment, whether direct, sub-contracted, agency or labour only self-employment along with the conditions of payment, the use of bonus and piecework. He concludes that the performance gap is a complex amalgam of the technical and social conditions of labour. Judith Ryser takes stock in her contribution of the consequences of sustainable interventions for the built environment. Her conclusion is that the construc-

tion industry tends not to be involved in the development of concepts and projects with 'eco-cities'.

In the report section we bring one report of an interesting conference in Toronto that fits in the subject. Beside, we publish the reports of our annual meeting and a preceding brainstorm session. You can read in these reports that there is enough work to come. Also included are a project announcement on the comparison of precarious construction work and a review of the European Wage Report.

As ever we invite you to come up with critical remarks and suggestions for contributions.

Colin Gleeson,
University of
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CLOSING THE GAP BETWEEN DESIGN AND PERFORMANCE – THE CURRENT DEBATE

This contribution is a technical overview of the so-called gap between design and performance of buildings, the difference between the energy design intent and the actual tested result. The performance gap has important implications for the achievement of global low energy targets as well as the specific performance of individual systems; at the macro end it impacts on the achievement of government energy and emissions reduction policy and has significant resource implications, whilst at the micro end, it impacts on the size of the household fuel bill and the level of 'fuel poverty'.

The existence of the performance gap was first proposed in Britain by Lowe and Bell¹ with further exploration developing a building envelope test² procedure, the co-heating test and a test sample. The testing of building envelopes before their occupation is disruptive of the project completion and handover process, requiring at least two weeks of isolation for the building while it is heated and the temperature difference between inside and outside monitored to assess the actual heat loss in Watts per Kelvin (W/K) or Watts per metre squared Kelvin (W/m²K), the so-called 'heat loss coefficient' and 'heat loss parameter'. Such testing can only be done during cold periods and adjustments made to the energy demand for solar gains during the test period. Additional challenges include an allowance for wet finishes, where wet and drying concrete, plaster and mortar offer a higher rate of heat trans-

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1. Lowe, R., Bell, M. (1998) Towards Sustainable Housing: Building Regulation for the 21st Century, Leeds Metropolitan University Centre for the Built Environment for Joseph Rowntree Foundation. [online] http://www.leedsmet.ac.uk/as/cebe/projects/towards_sustainable_housing.pdf[accessed 18 April 2014]
 2. Wingfield, et al. (2010) Whole House Heat Loss Test Method (Coheating) [online] http://www.leedsmet.ac.uk/as/cebe/projects/coheating_test_protocol.pdf [accessed 18 April 2014]

fer in contrast to their dried out condition. The co-heating test, when carried out by experienced building physicists has, however, found some level of acceptance as a valid performance measure and has resulted in the acceptance of the existence of an energy performance gap associated with the design and construction team rather than being dismissed as a function of occupancy.

For those interested in building quality standards, testing the building envelope before occupation is the only way of assessing the achievement of the design and construction team in meeting the specification. It may be difficult to assign responsibility for any underperformance because the design itself may be at fault, with little information on how to achieve air tightness and insulation continuity, the two primary necessities for low energy. The lack of 'buildability' has featured in construction discourse for many years and the implications for 'nearly zero energy buildings'³ will refocus the debate on architectural education and the need for a thorough technical understanding of detailing, air barriers and thermal bridging. Nearly zero energy buildings require a range of new knowledge and skills that must be understood by the designer and those who do the bill of quantities 'take off' from the design drawings. Junctions may be taped, lintels insulated, vertical insulation inserted at ground floor edges, an air permeability method statement prepared - a range of new construction techniques have evolved over the last few years which are still the provenance of low energy specialists.

The design is sent to site to be 'translated' into a building; it is for the builder to work out the method for doing this. The process includes the supply chain since any change in the quality of components, either because those specified are not available or from a value engineering perspective, will impact on the final energy demand. The construction of a nearly zero energy building is radically different from previous forms of

3. Energy Performance of Buildings Directive, 2010

building where small installation failures in insulation or air tightness are additive and result in failure to meet the 'nearly zero' design requirements. Such on-site challenges include the practicalities of working in site conditions, of interfaces between different construction occupations and the implications of team working and learning from feedback.

The completed envelope may be tested to assess whether it meets the energy design criteria. This was the focus for the early work on coheating testing. Whilst there is no single database of all coheating tested buildings, literature from Leeds Metropolitan University indicates that the performance gaps may be substantial, with all tested buildings failing to meet their design targets and some failing by over 100%.

The discussion of the performance gap has so far focused on the design and installation of the envelope. Underperformance within this context is linked to a failure in design assessment, a potential combination of inadequate design specification, poor analysis software, misunderstanding of manufacturers' laboratory-based product test results, or, importantly, in the capacity of the construction team, an inability to construct high quality buildings. Complicating the assessment of performance is the lack of test data. Whilst the UK Building Regulations require air permeability testing of a sample number from any housing construction programme, the results of initial testing are not publicly available. Such a database would provide some quantifiable indication of the size of the performance gap since a failure in meeting air tightness would indicate a likely failure to also meet insulation requirements. Undergraduate work at the University of Westminster^(4, 5) indicates such a relationship, where small construction companies generally showed little knowledge of low energy

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4. Shattock, Z (2012) Can the air pressure testing regime be improved to mitigate problems of policy and process unpublished dissertation, University of Westminster, London
 5. Clifton, J. (2013) Are the UK's national targets for the reduction in CO2 emissions feasible? unpublished dissertation, University of Westminster, London

design criteria, seldom provide method statements for achieving air tightness, and the installation of insulation is often of a poor standard. Current work by students (2014) is hampered by the reluctance of installers to provide access for observation, photographing and testing using such techniques as thermal imaging. Much of the UK construction industry is defensive about such research rather than embracing its positive contribution to the improvement of standards. For the larger organisations there are also concerns about protecting the company brand.

The UK Government department for Energy and Climate Change (DECC) has funded research into the impact of the performance gap and produced figures for average losses in efficiency of typical retrofit measures known as 'in-use factors':⁶

'The evidence base on the in-situ performance of the full range of eligible measures is patchy but is improving. Evidence has come from field trials of certain measures, such as cavity wall insulation, and other research such as DECC's National Energy Efficiency Data framework (NEED).' (p5)

According to DECC, the NEED data framework matches gas and electricity consumption data collected for DECC sub-national energy consumption statistics, with information on energy efficiency measures installed in homes, from the Homes Energy Efficiency Database (HEED). In practice, interpretation of metered energy requires caution since it may vary by over 100% for the same properties due to a variety of reasons including the number in residence, their employment status, number of children and disposable income. It is further complicated by the phenomenon of 'comfort taking', 'the rebound effect' or 'take back', where energy saving interven-

6. DECC, 2013. How the Green Deal will reflect the in-situ performance of energy efficiency measures. [online] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48407/5505-how-the-green-deal-will-reflect-the-insitu-perfor.pdf [accessed 18 April 2014]

tions allow occupants of previously under-heated dwellings to achieve thermal comfort for the same or lower fuel bills. DECC recognise that the performance gap may be influenced by both the design and construction process as well as factors associated with occupation, including such effects as impene-trable instructions for controlling heating and ventilation sys-tems. Where refurbishment or retrofit occurs, such impacts indicate that only deep retrofit energy interventions may pro-vide sufficient savings to retain a significant energy/CO₂ re-duction. However, deep retrofit, with savings of 80% plus, is disruptive, expensive and time consuming a well as requiring advanced knowledge, skills and competence.⁷

The move to renewable technologies for heating and hot wa-ter introduces the potential for further under-achievement, particularly in the form of renewable heat from air and ground source heat pumps. Heat pumps have been identified as central to European low energy targets specifically through the Renewable Energy Sources Directive, Appendix VII.⁸ A re-view of European heat pump trials, of over 600 heat pumps, indicates that heat pumps are particularly sensitive to design and installation knowledge, skills and competence⁹. Whilst heat pumps are capable of achieving high efficiencies and carbon dioxide savings in comparison to their main competi-tors, gas and oil, the range of performance for heat pumps is far greater than that of conventional boilers; there is no guar-antee that a particular heat pump installation will perform as well as the default gas boiler installation, resulting for a sig-nificant population in the potential for an increase in fuel bills and CO₂ emissions.

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7. Gleeson, C., Yang, J., Lloyd-Jones. (2011) European Retrofit Network: Retrofitting Evaluation Methodology Report [online] http://www.westminster.ac.uk/_data/assets/pdf_file/0003/108786/UW-ERN-Report-271011.pdf [accessed 18 April 2014]
 8. Renewable Energy Sources Directive 2009
 9. Gleeson, C, P., Lowe, R, 2013. Meta-analysis of European heat pump efficiencies. *Energy and Buildings*. vol. 66 November, 2013. p. 637-647

Whilst the performance gap has been shown to affect both new build and refurbishment or retrofit, it is by no means fixed and is subject to improvement by such interventions as site-based 'tool box talks' on-site testing and feedback, clearly showing the importance of appropriate knowledge. For existing occupations and new entry trainees, the VET system must therefore embrace the concept of thermal literacy for all construction occupations and energy literacy for renewable installers. Current work in the UK under the aegis of the Micro-generation Certification Scheme has led to new training provisions for renewable installers and, although a wide range of performance for heat pump installations is still evident, the mean for new installations is rising. Effective VET for low energy construction (VET4LEC) is therefore an imperative for the successful transition to nearly zero energy buildings and the even more exacting standards of 'net-zero' and 'plus-energy' buildings (buildings that produce more energy than they consume). It is the structure and content of such VET that is under debate with the concept of competence ranging from the Anglo-centric task-based competence, a 'can do the specific task' approach, through to the more typically continental European concept of a broad 'occupational capacity' where competence embraces a holistic overview of the entire production process and the specific tasks involved.

Fundamental to understanding the performance gap is the study of 'process'. Even a knowledgeable and skilled site workforce must operate within the context of the industry where detailed design and project management are critical factors. From a technical viewpoint, the UK Zero Carbon Hub¹⁰ is currently investigating assured performance processes including the design stage:

'Detailed design team members may lack knowledge or experience of the impact that their design will have on

10. Zero Carbon Hub (2014) Closing the gap between design and as-built performance. Evidence review report [online] http://www.zerocarbonhub.org/sites/default/files/resources/reports/Closing_the_Gap_Between_Design_and_As-Built_Performance-Evidence_Review_Report_0.pdf [accessed 18 April 2014]

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the energy performance of the dwelling. This might include the buildability of the design, site conditions and tolerance levels, optimising thermal detailing, and the compatibility of construction systems, materials and building services.’ (p24)

The report continues:

‘There is seldom direct discussion between the concept design team, detailed design team and construction team. There appears to be an assumption that thermal detailing problems resulting from the combination of various house types or the use of complex forms will be solved by the detailed design team. Similarly, it appears to be assumed that problems relating to buildability and construction phasing will be resolved by the detailed design team or construction team’. (p23)

Not only does the ZCH highlight building envelope concerns, especially related to thermal bridging, it also highlights a lack of integrated design between fabric, services and renewables. Within the context of UK construction, ‘new’ technologies such as whole house mechanical ventilation with heat recovery (MVHR) and heat pumps, provide adequate evidence of underperformance due to poor design and installation. The selection of these technologies is often driven by the need to achieve low carbon targets rather than their suitability to UK climate conditions or current levels of design knowledge and installation skills:

‘Interviews for the Housebuilding Process Review revealed that skills requirements are not being prioritised at procurement. This was apparent on site where there was a lack of site team energy-related knowledge, skills or care, frequently resulting in poor quality installation of services and fabric. The potential impact is high due to the knock-on impacts for fabric or services installation quality.’ (p32)

The integration of design and the necessary skills to carry out that design is not generally a feature of architectural training, indeed, it is uncommon for designers to consider such synergies. Closing the performance gap will require new approaches to architecture and design, project management and construction; for all members of the team.

Testing the building envelope will provide an evaluation of the 'as-built' performance that can be compared to the design brief. However, research by the UK NHBC Foundation¹¹ into co-heating: 'demonstrates the need for caution in the interpretation of results from individual co-heating tests' (p.vii). Six research partners with experience of co-heating testing joined the Building Research Establishment to test a pair of identical low energy Swedish timber-framed detached houses. The NHBC report states (p26):

'The calculated steady state heat loss based on as-built dimensions and specified (not measured) fabric element U values and infiltration was 68.4 W/K. Compared to this value the experimental co-heating test values were within the range -17% to +11%.'

Where nearly zero energy building is concerned, the performance gap will tend to be smaller in relative size than for a standard or current build specification and thus more difficult to accurately quantify. The deviation in test results, arising primarily from the interpretation of solar gains, along with the need for a two week test period, leads the authors to state that the current approach to co-heating testing is at present unsuitable for large scale application across the industry.

Thermal imaging, a powerful tool to identify insulation faults, thermal bridges and air leakage, can only provide results once the building is heated, that is post occupation. Without co-heating and thermal imaging, the only test available during

11. Butler, D., Dengel, A. (2013) Review of co-heating test methodologies. NHBC Foundation

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and upon completion of the building is air leakage or air permeability testing. In practice, therefore, any assessment of build quality will also rely on the qualitative techniques of interview, the analysis of site diaries and observation. Fundamental to the interpretation of such a qualitative approach is the assumption that a building produced by a well informed, knowledgeable construction team will result in a smaller performance gap.

A further complication that will also influence the production process is the contract of employment, whether direct, sub-contracted, agency or labour only self-employment along with the conditions of payment, the use of bonus and piece-work. The performance gap is a complex amalgam of the technical and social conditions of labour.

Judith Ryser,
London 11 April
2014

DEALING WITH CLIMATE CHANGE AT THE URBAN SCALE, ECO-CITIES AND IMPLICATIONS FOR THE CONSTRUCTION INDUSTRY

Debates about how societies are treating the natural environment and assess the ecology of the planet are long standing, but they have evolved into arguments about climate change which are opposing neo-liberal politics to alternative movements. Transforming these debates into action and results in the real world involves many protagonists, and the question is what role the construction industry could assume in this process.

Climate change targets and their objects

GHG emission reduction targets are being continuously set and renegotiated at various interdependent levels. The EU which contributes 11% to emitted GHG worldwide has set a unilateral target for 2020 to reduce GHG by 20% (from the

1990 baseline), a headline target for the 'Europe 2020 Strategy' for 'smart, sustainable and inclusive growth'¹. Its achievement relevant to the construction industry includes action on buildings, waste management and surface transport. The UK target of GHG emission reduction is 50% by 2023-27 and 80% by 2050 from a 1990 baseline². The latest UK figures on GHG emissions put estimates for 2013³ at 569.9 MtCO₂e, 1.9% lower than 581.1 MtCO₂e in 2012. CO₂ emissions which constitute 82% of GHG in the UK have decreased by 2.1%. The largest decline was in the energy supply sector, part of which may be due to UK's share of the EU Emissions Trading System (EU ETS) for power and heavy industry, besides a sluggish economy. It is beyond this paper to discuss GHG targets, safe to say that setting targets is one thing, putting into practice GHG mitigation and adaptation, preventing contradictions between them, and bringing GHG reductions about in the real world is quite another⁵.

Implication for the built environment at various scales

The built environment and its uses are a prime candidate for GHG emission reductions. In the UK, for example, energy use in buildings accounts for 36% of GHG, transport for 24% and industrial for 22%, the latter including the supply chain and construction activities⁵. The question is how agreed emission reduction targets can be translated into concrete measures and, for the purpose of this paper, into those capable of assisting to adapt the production and use of the built environment.

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1. http://ec.europa.eu/clima/policies/g-gas/index_en.htm
 2. <https://www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050> The target, first legally binding worldwide, was laid down in the 2008 Climate Change Act.
 3. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/295968/20140327_2013_UK_Greenhouse_Gas_Emissions_Provisional_Figures.pdf.
 4. See for example, comparative study between UK-London and Spain-Madrid. Teresa Franchini & Judith Ryser. Toward Low Carbon Cities: Madrid and London. 2009. Isocarp congress, Porto.
 5. ARUP with WRAP (Working Together for a World Without Waste) and TCC (The Climate Centre). Low Carbon Routemap for the UK Built Environment. The Green Construction Board. 2013.

Most interventions against adverse effects of climate change are targeting individual buildings. A vast technical literature and 'eco-techno' solutions exist, notwithstanding plenty of room for improvements, for example to reconcile the balance between energy demand and the protection of the environment, two sides of one coin. Much less attention is attributed to neighbourhoods and the way they emit CO₂, let alone how the city as a whole functions as an ecosystem and what interventions would apply at that level. What may be an optimum solution to curb CO₂ emissions at the level of a single building may not produce the best results within a neighbourhood and its micro-climate. Best 'eco-solutions' for single buildings cannot simply be compounded and scaled up, as they do not take account of the way buildings interact with each other and with the spaces between buildings⁶. Many other contextual characteristics intervene at the level of cities as a whole which, moreover, are not closed systems. Cities interact with their wider surroundings and are conditioned by regional features such as topography, configuration of blue-green corridors and urban climatic specificities. They are transformed by agglomeration factors and the massing of its buildings which influence, for example, the formation of heat islands, inversions or air flows with repercussions on urban living conditions inside and outside buildings.

It is important therefore to consider interventions to reduce GHG emissions at different levels, ranging from buildings, to quarters, neighbourhoods, urban districts, as well as cities as a whole and their agglomerations. These levels require different measures to increase, for example, energy efficiency for supply, distribution, usage by and in buildings. While a lot of progress has been made in green building technology, increasingly incorporated in building regulations, environmental impact assessments, evaluation tools and standards, the

6. Eric Keeble, Michael Collins, Judith Ryser, The Potential of Land-use Planning and Development Control to Help Achieve Favourable Microclimates around Buildings: A European Review. In: *Energy and Buildings* 15-16 (1990/91) 823-826.

ecological behaviour of neighbourhoods is less well known, owing not least to their complexity and interactions with their wider surroundings⁷. Some organisations like the Building Research Establishment and Bio-Regional are dealing with this scale when elaborating criteria for measuring and evaluating the ecological performance of physical developments. They have devised methodologies to that effect, the BREEAM Communities criteria⁸ and the One Planet Communities principles⁹ respectively discussed below.

Applying optimum green building technology to a single building rather than to larger areas is not only easier for technical reasons but also owing to the fragmented and multiple ownership of neighbourhoods and conflicting views about their evolution. Diverse stakeholders may aim at different types of interventions which could have adverse effects on each other. Better knowledge of such interactions on the environmental performance of a given area is required to inform planning and development strategies which planning authorities are deemed to devise to the benefit of the wider community as a whole. Often knowledge is generated in response to outside threats and abandoned with its disappearance. Examples in the UK are Energy Action Areas explored during the miner strikes and dropped when energy supplies were reinstated¹⁰.

Potential interdependencies grow exponentially with scale and make strategic spatial planning and interventions at city level extremely complex. Therefore, measures tend to be con-

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7. Michael Collins & Judith Ryser. 1991. Initiatives to help achieve favourable microclimates around buildings: an international review on environmental and land use policies. Bartlett UCL Occasional Papers, research for BRE.
 8. BREEAM Communities Manual 2012. Code for a Sustainable Built Environment. (BREEAM: Building Research Establishment Environmental Assessment Method), available on www.breeam.org
 9. Pooran Desai. 2010. One Planet Community, a real-life guide to sustainable living. Wiley; and annual reviews
 10. cf, for example the Bartlett UCL Energy and Urban Development initiatives which include an Energy Action Area in cooperation with the London Borough of Tower Hamlets. UCL 1984.

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fined to technical solutions and administrative tools. Technical solutions of climate change mitigation and adaptation include greater energy efficiency, better controlled water and waste management, integrated flood protections and eco-retrofitting. Among regulatory tools are more stringent building regulations, or incentives as well as coercions to reduce energy consumption. Planning policies have incorporated green considerations for some time. They translate into current criteria such as compact cities, high densities, concentration of activities, mixed development in the hope of shorter travel to work journeys, renewable energy supply, low carbon zones, recycling, zero waste production, congestion charging, green construction and more.

There are several reasons to focus on cities. Firstly because cities could provide a coordinating framework to alleviate contradictory effects between the many disparate sustainable solutions proposed by a plethora of protagonists for lower levels of intervention. The important social, cultural and economic dimensions are beyond the scope of this paper which confines itself to technical and administrative aspects. Secondly, because city administrations hold political powers which enable them to take decisions on seemingly objective criteria but according to different, often ideological motivations which, in turn, have contradictory effects on climate change mitigation and adaptation. This aspect is illustrated, using London under two opposed political regimes. Thirdly, because the eco-city, the eco-town, the transition town were conceived specifically to solve the man-made ecological problems of the planet.

Mitigating and adapting to climate change: London, one city - two tales

The new administration created for Greater London in 2000 was run by two mayors with contrasting politics. Although they both had ambitions to make London the greenest city on the planet, their approaches differed. In 2006 emissions from housing were 38%, from commercial buildings 33%, ground

based transport 22% and industry 7%. Space heating and cooling amounted to 54% in the domestic sector, followed by 18% for hot water heating, 18% appliances, 5% lighting and 3% cooking¹¹.

The 2007 Climate Change Action Plan of the socialist mayor was a strategic document. Various scenarios were showing how Greater London could shift from its is-state to reach the mayor's stringent GHG emission reduction targets of 60% by 2025 from a 1990 baseline, what savings could be achieved by the Mayor's Action and which would have to be contributed by the market or central government measures. The Plan postulated that two thirds of CO₂ emission reductions could be delivered through behavioural changes, together with some basic energy efficiency measures, supported by its Green Homes Programme. They included heavily subsidised loft and cavity wall insulation, improving energy efficiency of the social housing stock, skill training toward a sustainable energy industry, alongside referral services, energy audits and awareness raising of possible user actions. Although most of these measures concern the construction industry the mayor did not involve it directly.

The mayor's climate change policy included the Green Organisations Programme to deliver CO₂ emission reductions in the commercial building sector. It incentivised landlords to upgrade their buildings to greater energy efficiency, badging green organisations and lobbying for better building partnerships, the latter with scarce indication of what they would consist of and with little real power over their implementation, except the Greater London Authority's own building stock. The easiest part to implement these targets was to impose zero and low carbon standards for new build and higher development densities, keeping in mind though that new ad-

11. Mayor of London. London CO₂, Action Today to Protect Tomorrow, the mayor climate change action plan. GLA 2007.

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ditions contribute less than 1% to London's housing stock. Alongside these measures CCHP (local combined heat and power generation) were advocated, together with on-site renewable energy supplies, energy production from waste, short term carbon sequestration, and reduction of emissions from ground-based transport.

The partisan and short term political cycles contradict the timescale required for such programmes to achieve their expected effects. It is significant that the socialist mayor published his Climate Change Action Plan in the penultimate year of holding office (2000 to 2008), although climate change mitigation was high on his political agenda and significant for his election. When the current conservative mayor came to power in 2008, he scrapped many programmes initiated by the previous mayor¹² although he supported emission reductions and published his own climate change mitigation and energy strategies in 2011¹³. Setting out how London would achieve its targets he proposed to compound mayoral, government and market activity¹⁴.

Various new proposals figure for non tradable actions in the current mayor's 2014 Climate Change Mitigation and Energy Annual Report to reach the proposed ambitious CO2 reduction targets of 60% by 2025 from 1990 baseline which he kept from the previous administration¹⁵. However, he was shifting from direct intervention to advice, and to supporting the market in producing decentralised energy supply, retrofitting homes and public sector buildings, while trying to obtain ideas from low carbon entrepreneurs by offering prizes¹⁶. Com-

12. <http://www.insidehousing.co.uk/london-green-homes-plan-to-be-scrapped/6502501.article>

13. Delivering London's first Climate Change Mitigation and Energy Strategy, GLA 2011

14. Note that the energy regulator is investigating six energy companies which failed to meet targets to improve the energy efficiency of their customers' homes. <http://www.insidehousing.co.uk//6526730.article>

15. <http://www.london.gov.uk/priorities/environment/publications/the-mayor-s-climate-change-mitigation-and-energy-annual-report>

16. <http://www.london.gov.uk/priorities/business-economy/for-business/cities-summit-2014>

pared with 2006, in 2011 CO2 emissions declined by 2% in homes, 1% in transport, but increased by 3% at workplaces (commercial and industrial combined).

Table: CO2 emissions in London 2006 and 2011

CO2 emissions (%)	homes	workplaces (commercial and industrial)	transport (ground level)
2006	38%	33% + 7%	22%
2011	36%	43%	21%

The increase of CHP and CHPDH taken up from the previous mayor is from a very low base. Together they contribute 1% of London’s electricity and 2.4% of London’s heat, with another 2.5% supplied by renewables. The mayoral subsidies aim to unlock the market for decentralised energy with the aim to supply 25% of London’s energy locally by 2025, supported by delivery through the planning system, enabling identification and development of decentralised energy opportunities, building capacity for their delivery and facilitating the commercialisation of the decentralised energy market. No specific policies or measures are directed to the construction industry, despite its potential role in this pioneering process or training towards these aims.

The present mayor’s preferences are two-fold. He favours carbon trading for which he sees an opportunity for London’s financial sector. Carbon trading includes energy intensive industrial installations and power stations as well as the aviation industry¹⁷. It accounts for over 50% of the emissions reductions in the UK¹⁸. Besides that, he focuses on advice to the private sector to take up opportunities in the green sector.

17. <https://www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050/supporting-pages/eu-emissions-trading-system-eu-ets>
 18. Cement which is relevant to London is over-allocated by 38.3% (2008-12) and iron and steel by 33.1%.

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The Greater London Authority (GLA) has recently set up the Decentralised Energy Programme Delivery Unit RE:NEW in an advisory capacity¹⁹. The RE:NEW domestic energy efficiency initiatives aims to contribute substantially to the reduction of London's CO₂ emissions by 60% by 2025 from 1990 levels, in contrast to the UK-wide 35%. Considering that 80% of London's housing stock will still exist in 2050, retrofitting remains crucial. Action is shifted to the London Boroughs, as well as to interested large scale private landlords in a voluntary capacity which RE:NEW assists with financial and procurement advice and on how to use Energy Company Obligations (ECO) and the Green Deal. The RE:NEW team has produced a CSCO map identifying eligible areas which could be construed as potential 'eco-neighbourhoods'. The RE:FIT programme deals with retrofitting public sector buildings which contribute some 10% to London's carbon footprint. No clear quantitative overviews exist of these retrofitting programmes and their concrete effects to date, nor clear consolidated information on their funding. Meanwhile, no explicit role is attributed to the construction industry in this process, although it could concretely contribute to the planned 'best practice' database on retrofitting.

The rationale for eco-cities and eco-towns

The short overview of London's climate change strategies shows that cities are playing a prominent role in GHG emission reductions. It is in this context that the notion of eco-cities and the proposal of eco-towns in England are posited. Considering the urgency of responding to climate change, it could be argued that measures of mitigation and adaptation become essential for all cities, and not only for new developments which eco-cities usually are. So what special contribution to a more sustainable future can, or do they claim to make?

19. <http://www.london.gov.uk/priorities/environment/tackling-climate-change/energy-efficiency/re-new-home-energy-efficiency> accessed 02/04/14.

What is termed 'eco-city' in Asia²⁰ is a far cry from Richard Register's initial definition 'An ecologically healthy human settlement modelled on the self-sustaining resilient structure and function of natural ecosystems and living organisms'. Register's Ecocity Builders Company realises self-sustaining resilient structures which do not consume more than they produce. His approach is quite the reverse from the proliferation of 'eco-cities', often designed by Western 'starchitects' in the middle of nowhere on empty sites, composed of steel and glass towers with potential to balloon into mega-cities. Most of them include some 'eco-techno' measures, some also at city level²¹. Many of them remain projects on promotional websites, some overlap with the ICT driven 'smart cities'²², 'iCities', 'intelligent', or 'sustainable', 'healthy', 'liveable' cities. Nevertheless, these efforts should not be condemned out of court, as they often provide fertile ground for eco-experimentation.

Among the most hyped eco-cities were Dongtan on an alluvial island near Shanghai, China and Masdar in the desert outside Abu Dhabi, UAE. Ironically, the latter is in the country with the world's largest per capita ecological footprint. Designed by Arup, Dongtan incorporated all known eco-techno principles at the level of the development. Its unsustainable problem was twofold: first, the long distance from Shanghai where it was located on a greenfield site which, moreover, was a natural ecological reserve sadly eroded even after the abandonment of Dongtan; secondly the road linking Shanghai in one direction with the other side of the Yangtze river in the other, enables Shanghai's mega-urban-conurbation to expand in an untouched natural space. Masdar designed by

20. See for example, Judith Ryser, Asian Eco-Cities, a critique. In: FuturArc, the voice of green architecture in Asia, march-April 2013, 1 Volume 29. Judith Ryser. 2014. Eco-cities in Action, Sustainable Development in Europe: Lessons for and from China? Forthcoming in Europe-China Dialogue, East Asia Institute, National University of Singapore.

21. E.g. Songdo International Business District in South Korea, a 'private' city under construction.

22. E.g. Yokohama smart city project, one of the early examples to focus on an energy management system for the community as a whole, as well as home energy management.

Foster and Partners was endowed with the latest, often expensive 'eco-high-tech' solutions. Again, its remote location from existing cities, in a very adverse climate to human habitation is unsustainable and counteracts the ecological features within the city, notwithstanding those which have been abandoned for cost reasons²³. Both these eco-cities were in effect free standing expansions of the rapid urbanisation process relying on car journeys in China and the Middle East. Under construction, Masdar continues to be used as a model, although it does not necessarily promote sustainable living and is criticised for its inward looking enclave nature destined for the rich²⁴. What both these examples ignore is their adverse externalities by adopting arbitrary capital carbon boundaries, omitting the ecological footprint of transport infrastructure required to link them to the existing city network, and the ecological costs of supplying materials, water, even people from remote places. At best, they could be construed as live laboratories to test the various assumptions about the ecological performance of their contribution to carbon emission reduction within their own confines. Curitiba in Brazil was another example praised for its green transportation policies. Unfortunately, the ingenious bus system failed to retain its patronage in this major car manufacturing city which has reverted to car dominated traffic. Arthur Lau suggests that possibly only autocratic regimes are able to impose ground-changing eco-designs²⁵.

The eco-towns initiated by the previous labour government in the UK seem to have died a quiet death, except for North West Bicester planned for 6000 individual homes²⁶. Their flaw was that they were not ecological either, for similar reasons

23. E.g. the underground tunnel network for electric cars, one of Masdar's initial flagship features.

24. http://www.stanford.edu/group/journal/cgi-bin/wordpress/wp-content/uploads/2012/09/Lau_SocSci_2012.pdf. Arthur Lau, Masdar city, model of urban environmental sustainability, Stanford University, Social Sciences 2012.

25. http://www.stanford.edu/group/journal/cgi-bin/wordpress/wp-content/uploads/2012/09/Lau_SocSci_2012.pdf op.cit

26. <http://nwbicester.co.uk/>

as eco-cities, except at a much smaller scale. They were proposed on green field sites, away from workplaces or urban concentrations, requiring expensive infrastructure to connect them. In that, they did not differ from any suburban extension, precisely what sustainable urbanism tends to avoid. The eco-town initiative may retain the merit that any city which is planning new areas may be more likely to incorporate ecological criteria and ways of reducing GHG emissions by adopting all the known eco-technologies for buildings, as well as at the level of the development as a whole.

Are there eco-cities worthy of their name anywhere? In Europe, Vauban in Freiburg Germany, Hammarby Sjostad in Sweden, and Logrono Montecorvo in Spain²⁷ are those most quoted. A closer look shows that only Hammarby Sjostad²⁸ is located within the urban fabric of Stockholm and is actually built, combining eco-buildings and eco-infrastructure. Vauban is a suburb with eco-buildings linked by public transport, being built and continuing to grow²⁹, while Logrono remains at the project stage. Sarriguren is the only eco-city partially built

27. http://www.mvrdv.nl/projects/398_eco_city_montecorvo/, <http://www.dezeen.com/2008/09/27/logrono-montecorvo-eco-city-by-mvrdv/>, <http://architizer.com/projects/montecorvo-eco-city/> Logrono Montecorvo ecocity arose of a competition for 3000 dwellings won by MVRDV with GRAS, proposing a solar city on south sloping hills adjacent to the existing city generating 100% energy for the development including from wind turbines in adjacent eco-park.
28. <http://www.futurecommunities.net/case-studies/hammarby-sjostad-stockholm-sweden-1995-2015> Future communities 2009. Hammarby Sjostad Stockholm, Sweden 1995-2015. Triggered by a bid for the Olympic games 2004, it is based on competitions between developers to spur innovation for a flexible masterplan for 11,000 high density dwellings, new public transport links, an underground waste collection system, low car ownership, retail at street level, leisure and green spaces. The project on publically decontaminated and subsidised land allowed for feedback and adjustments on a polluted brownfield industrial site. Planning and development departments of the city cooperated with 40 building contractors for delivery. An education centre showcased environmental technologies encouraging inhabitants to reduce their energy and water consumption. Sweden's compulsory lifecycle cost analysis fosters high initial investment, which supports higher environmental standards.
29. The eco-principles of Vauban, built on a French army barracks brown field site were as much social as material: diversity in place, design by choice, self-organising communities, open-ended development, public spaces at different scales, environmental urbanism, restricted private car mobility. The bottom-up participatory process has led to its lasting success, including in the higher density solar settlement designed by Rolf Disch which contributes photovoltaic electricity for the whole development, together with wood chip fired power station.

in Spain. It is a prize-winning³⁰ integrated eco-extension of Pamplona, Navarra comprising a green technology development park, university labs, flexible workplaces, 5,500 mostly social homes, and spaces for recreation and leisure, all directly connected with Pamplona city centre by public transport. It was co-sponsored by a large housing association which was keen to convert to green design and worked closely with the local construction industry and companies which intended to settle in the eco-technology park there³¹. The Spanish property bubble crash slowed down the development, safe for social housing and the CENER, the national renewable energy centre on the eco-techno park³².

BedZED, inhabited since 2002, is a mixed use eco-development of 82 homes and 1600m² workspace, with some amenities and a community centre in the southern suburbs of London³³. It has been built on an initially local authority owned green field site. The architect Bill Dunster cooperated with Bio-Regional, environmental consultants, both with their offices in BedZED³⁴. The other partners were Arup, the developer Peabody Trust, and the local authority of Sutton. The contractor was not included in the conceptual team, but the inhabitants are involved in the management of common infrastructure and activities. The design aimed to integrate as many as possible ecological measures, working on zero fossil energy and using renewable sources. The objectives for

30. <http://www.itursa.com/en/proyectos/urbanizacion-de-sarriguren/> A 2008 European Council of Spatial Planners' award went to municipality of Sarriguren. Its master-plan by Alfonso Vegara, Fundacion Metropoli and its Impact Sector Plan by Iturralde y Sagues engineers.

31. Sarriguren, Ecociudad - Ecocity, 2009. Gobierno de Navarra & Fundacion Metropoli.

32. http://books.google.co.uk/books?id=rT_iHupCe0c&pg=PA32&lpg=PA32&dq=sarriguren+spain&source=bl&ots=6FdDAkY63Q&sig=_JiE2hLnqjbCUu3C42M5cbAk_tc&hl=en&sa=X&ei=fmhGU6fbNsuwPOD1geAJ&ved=0CCsQ6AEwADgK#v=onepage&q=sarriguren%20spain. Thomas Schroepfer. Ecological Urban Architecture. 2012. Birkhauser Verlag. He focuses on low-tech vernacular architecture, environmental machine for living, material ecology, techno-science, literal greening, transformation, and (re)examining the city as a whole.

33. http://www.energy-cities.eu/IMG/pdf/Sustainable_Districts_ADEME1_BedZed.pdf

34. <http://www.bioregional.co.uk/about-us/>

BedZED were to reduce energies used for transport by 50%, domestic energy by 60%, heating needs by 90%, water consumption by 30%, besides recycling waste, using local materials, sustaining bio-diversity and attempting to live in a local circle with local products. While a number of measures had failed or did not produce sufficient economic return, such as the woodchip communal heating plant, the south facing veranda spaces and the stringent car restrictions, others were liked by a well settled community.

What these European examples have in common is that they are all located mostly on greenfield sites on the fringe of existing cities, subsidised one way or another, and conceived in cooperation between the local authority, developers, designers, sometimes green technology advisers and future inhabitants. The construction industry tends not to be involved in this process of cooperation. Focused on eco-building, they include green infrastructure, local energy generation, green water and waste management and measures to curb private car use. Some aim at mixed development including from a social point of view with the idea of community building in mind. They all take a long time to plan and implement. For that reason those with the most flexible masterplan combined with a regular measuring and feedback mechanism are best able to adapt to new circumstances, be they technological, economic or socio-cultural.

How to measure the performance of eco-cities?

The energy and environmental characteristics of buildings, urban transportation, workplaces, blue-green areas and the spaces in between buildings are extremely difficult to quantify or even to model, especially when taking account of the actions of their users. Aside material matter and space there is also a time element which changes the urban fabric as well as its uses and needs to be factored into such an equation.

Realism imposes simplification when trying to measure the ecological credentials of cities quantitatively and qualitatively.

Cities tend to adopt an iterative process. They start by establishing broad targets and subsequently more detailed criteria, to establish, for example, what it would take to turn them into 'eco-cities'³⁵. These criteria can be translated into indicators, standards and frameworks which enable cities to compare their progress over time, as well as to measure their level of sustainability against other cities, an increasing necessity imposed by globalisation³⁶. This process presupposes that cities have empirical databases, a costly undertaking requiring data collection capacity and specialist knowledge of data mining and interpretation. Simon Joss gives a pertinent overview of eco-city indicators and standards³⁷. His analysis shows that to date most indicators, standards and frameworks apply to targets, and rarely measure real situations post hoc. Even if these modes of measurement are aimed at policies, it remains difficult to ascertain their effects in the built environment, and even less the built environment in use. The Building Research Establishment BREEMA Communities Technical Handbook illustrates that well. Its methodology aims mainly at technical performance specifications which are based on empirical collections of previous measured experiments and they operate more as ex-ante checklists than measurement tools.

What distinguishes BedZED from many other eco-developments is that its ecological objectives are measured continuously since it has gone into use, resorting to the One Planet Living Principles³⁸ of BioRegional which include both ex-ante and post-hoc evaluation tools. Thanks to this monitoring and feedback process several technical aspects of BedZED

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35. What makes an Eco-Town? A report from BioRegional and CABI inspired by the eco-towns challenge panel. 2008. CABI
 36. Joss, S, Tomozeiu, D. & Cowley, R. 2011. Eco-Cities. A Global Survey 2011. (Eco-City Profiles). London. University of Westminster.
 37. Simon Joss (ed). 2012. International Eco-Cities Initiative. Tomorrow's city today, eco-city indicators, standards & frameworks. Bellagio Conference Report. University of Westminster.
 38. Pooran Desai. 2010. One Planet Community, a real-life guide to sustainable living. Wiley; and annual reviews <http://www.oneplanetcommunities.org/about-2/process/endorsement/annual-review/>

could be adjusted. However, BioRegional's priority is human behaviour and how to foster change toward less profligate waste of resources. For that reason it emphasises 'sustainable living' rather than 'sustainable environments'. A comparative discussion of BREEAM Communities and OnePlanet Communities concludes that such indicators, standards and frameworks can be a useful tool toward designing sustainable development, keeping in mind thought that they are subjected to many other higher order considerations beyond purely technical or environmental criteria³⁹.

What role for the construction industry in the eco-game?

Clearly, the construction industry could and should play an important role in a more ecological approach toward a more sustainable built environment. However, it is rarely invited, or seeks actively to join conceptual teams, nor does it seem to have found a place among the third party agencies which are devising indicators, standards and framework, nor those which aim to acquire certification powers, something that would have direct repercussion on its practices.

The construction industry could and should play a more prominent role in the implementation process, including testing indicators and standards, and contributing solutions arising from its practice of transforming eco-designs into real life constructions. It should also be involved in monitoring and evaluating whether the postulated targets have been achieved or, if not, whether they were achievable with current construction practices. Finally the construction industry should aim at a greater role in devising training programmes specifically geared toward eco-building, and in training the practice of eco-building, for both new-build and retrofitting.

39. Judith Ryser. 2013. Strategies for the post-speculative city, redressing the balance in favour of sustainable development, Methods of Measuring and Assessing the Sustainability of Urban Developments. EUSS 4 (Fourth European Urban Summer School), Madrid, 2014, CEU & AESOP.

Subject articles

Overview: Third party agencies devising indicators, standards and frameworks

1. intergovernmental organisations	They aim to establish global acceptance of their policy frameworks and evaluations ⁱ
2. industry (eco materials and appliances)	It wishes to get its technical tools and certification accepted globally and sell them as a service, preferably on a continuous basis ⁱⁱ
3. national agencies	such as green building councils or university consortia which devise assessment systems mainly for national but, by extension, for international use ⁱⁱⁱ
4. professional bodies	Aiming to endeavour to influence behaviour and related policies. ^{iv}

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- i. e.g. Eco2Cities from 2010 as part of the World Bank's Urban and Local Government Strategy aimed at the developing world; SlimCity, an annual assessment of 'eco-efficiency' measures by the World Economic Forum using World Bank eco-city indicators and metrics; the Climate+ Program from 2009 by the Clinton Climate Initiative for carbon neutral developments; the Green Cities Programme by the OECD collecting and disseminating 'green growth' best practices; the Reference Framework for Sustainable Cities (RFSC) with its on-line toolkit by the European Union.
 - ii. E.g. the Green City Index by Siemens, a technical tool to assess urban sustainability based on global data from 20 large cities; standardized 'smart city measurement indicators' by Hitachi for urban management and infrastructure; 'Smarter City Assessment' by IBM, a tool for customised 'key performance indicator measurements and city benchmarking; the International Ecocity Framework and Standards (IEFS) as a certification platform by Ecocity Builders.
 - iii. e.g. the ICLEI Star Community Index, US national standards for sustainable communities developed by ICLEI with the US Green Building Council; BREEAM Communities, a multi-stage assessment and certification scheme designed by the British Research Establishment for urban masterplanning, from which 'Leadership in Energy and Environmental Design (LEED) was derived in the USA, a multi-stage rating and certification scheme operating at neighbourhood as well as building levels; Eco-city Development Index System by the Chinese Society for Urban Studies, including indicators for innovation.
 - iv. e.g. One Planet Communities has been developed by BioRegional which focuses on ecological footprint analysis based in ten principles including health and happiness; Global City Indicators Facility is a membership based standardised method for comparing city performance, including 'quality of life' categories besides city services designed by the government of Ontario with the University of Toronto; the Community Capital Tool devised by the universities of Simon Fraser in Canada and Tilburg university in the Netherlands consisting of a scan of six mutually reinforcing community capitals as a social learning tool.

Reports

WORK IN A WARMING WORLD (W3): LABOUR, CLIMATE CHANGE, AND SOCIAL STRUGGLE

Colin Gleeson,
University of
Westminster

University of Toronto, 29 November - 1 December 2013

W3's conference goals were to:

'bring together labour and environmental activists from the global north and the global south; make path-breaking labour and environmental research on the climate struggle known to a wider public; create a platform for ongoing links between researchers and unions to develop ideas, strategies and tactics; share best practices in greening work and workplaces; bring labour and labour research to the forefront of greening the world of work; identify opportunities for labour leadership in the struggle to slow global warming.'

The heart of the W3 mission is to support workers in their quest for an equitable solution to 'work in a warming world'. Rather than act as passive recipients of managerial decisions driven by climate change, W3 promotes the active engagement of trade unionists in the struggle for a sustainable future in driving change in work practices. The motto: 'there are no jobs on a dead planet' was heard more than once at the conference.

The W3 organisation is predominantly a mix of trade unionists and academics. It aims to provide a forum for developing workers' responses to the immediate effects of global warming and the longer term shifts in jobs as political mechanisms drive potentially calamitous changes to work in response to carbon dioxide emissions. Such a change was witnessed in Britain during the 1980s and 1990s when coal mines were closed down and mass unemployment swept the former coalfields as government pursued a political agenda, which resulted, inter alia, with the shift from coal to gas and thus lower UK carbon dioxide emissions.

Reports

W3 aims to bring together as wide a constituency as possible to debate and develop strategies for workers to impact on how their employment should change in response to the climate challenge. The conference topics under discussion ranged from the role of national organisations, such as the health services and the post office, and their emissions from buildings and vehicles; through to the specific effects of climate change on particular areas of employment, such as the destructive impact of the Mountain Pine beetle (normally controlled by cold winters) on the Canadian logging industry. Discussions around specific job types, presented by trade unionists and NGOs were interspersed with the more general development of a 'just transition policy', green labour law and the need for local strategies to counter global inequalities.

Neoliberalism and globalisation were constant themes that expressed the international nature of the conference. Informal worker numbers were quoted as responsible for more than half of the world's non-agricultural work in most developing regions, with no legal or social protection. Where does the power for struggle reside in international bodies representing precarious workers like domestic workers, street vendors and waste pickers who are individually powerless? An interesting discussion evolved around the role of relationship building, where workers from the developing world were ushered into developed world conferences and where little attention is paid to cultural challenges around food, toilets, the cold, language difficulties and conflict over gender politics and representation, often leading to isolation and misrepresentation.

The conference included reports by Canadian First Nations and their struggles, such as the 'Idle no More' movement, to protect their lands against new forms of despoliation including fracking, tar sands extraction and pipelines imposed by a coalition of government and trans-national business on communities already suffering from degraded living conditions

and the breach of Treaty rights. A description was given of the polluting impacts of fracking and tar sands extraction on the environment, with oil spills and the increase in chemicals, radioactivity and methane in groundwater, along with an increase in earthquakes. Fracking gas will be piped to the Alberta tar extraction sites to melt the tar sands which are then to be exported via pipelines to British Columbia and the United States. The infrastructure for this new industrial revolution in the Canadian wilderness results in a contradictory role for pipeline and refinery workers as their employment despoils the ecology of Canada and results in conflict.

Also presented were global warming impacts on Pacific nations as sea levels rise in conjunction with the increase in tropical storms, loss of land, salination of groundwater, changes to tourism (a primary source of income) and the advent of 'disaster tourism', tourists who come specifically to view the effects of tropical storms. Climate change will result in a number of microstates in the Pacific sinking below spring tides within 20 years, yet much of the essential GDP for these island communities, including disaster tourism, is from energy intensive (and thus global warming) impacts – air transport, food imports, water extraction and hotel development, much of it presented as 'eco-tourism'.

Of particular concern at the conference was legislation aimed at stopping unions from pursuing social justice where global warming introduces conflict over the role of unions outside of any specific job-based context. The move to such legislation, already extent in many countries, is driven by neo-liberal policies allied to globalisation. How are unions to engage in the wider field when legal boundaries are drawn around political organisation and action? Such divisions were demonstrated with reference to the financial crash that wiped out 32 million jobs worldwide and the call for a revival of 'social unionism' rather than a solely workplace-based organisation. Workers presenting a sustainability agenda are seen to threaten the 'managerial prerogative', a reflection presented by Canadian

Postal Workers in their struggle to include sustainability measures in conditions of contract negotiations.

The concept of environmental law was much debated within the context of 'the war on scientists' and the continuing privatisation of the scientific research that leads to government policy. The outsourcing of scientific reports to private organisations, as government laboratories and research centres are privatised, presents a conflict between the need for objective reporting and the need to remain on-message if only to ensure future contracts. Politics, science and law are, in this context, clearly related to each other. Law needs to encompass justice for both humans and nature where local strategies do not introduce global inequalities; thus the need to internationalise around broad based policies alongside 'militant particularism', where there will be both declining and ascending sectors. Fascinating discussions ranged from the concept of 'horse law' – is there a separate discipline that is 'environmental law' – through to fair trade versus free trade with its restrictions on such rights as local labour procurement. What does a 'law of just transition' look like, how is it different from horse law, what is it made up of? How do we transition from dirty jobs to clean jobs that protect the environment?

What is clearly non-sustainable work, including the extraction of tar sands and fracking, were presented as examples of conflicting roles for trades unions – 'never met a job we didn't like' and the fact that the union most impacted by the call for sustainable practices has to balance the needs of its members – that is the need for work – with the long-term implications of sustainable policies; jobs versus the environment. Traditional occupations such as coal and steel, by their very nature, support the development of collaborative working practices and thus higher wages and better conditions. Coal needs organised labour; miners, railway workers, et cetera, whereas, once infrastructure such as pipelines is installed, oil does not. Where traditional work is available, irrespective of its environ-

mental impact, unions will support it since they must represent the immediate needs of their members, continuing employment.

Whilst bio-mass is closer to coal and may lead to new democratic developments, the replacement of traditional jobs that have been at the heart of the trade union movement by a more services-driven economy - with its Walmart-type employers, zero hour contracts and internships- radically impacts on the role of trade unions. The corollary of this type is thinking is the 'unions versus environmentalists' scenario, witnessed during Canada's logging wars. Climate justice has the potential to unite these traditionally opposed constituencies, for environmental groups and trade unions to work together to develop a tripartite solution of sustainability, equity and democracy. The challenge was expressed by one speaker as 'progress away from growth', how to move from a continuous-growth economic paradigm.

Not surprisingly, the current situation in Canada was a common theme for many conference speakers with examples of the green economy and its impact on employment around, for example, photovoltaics and wind turbine manufacture, installation and maintenance. Conflicts with a protectionist policy from the WTO and the EU featured in the discussion as the development and protection of local manufacturing jobs impinged on free-trade agreements. The message from the Canadian Labour Congress was to develop a social plan: 'climate change is the most powerful weapon in the hands of trade unionists'. UNIFOR called for internal educational development within trade unions around labour, environment and social justice. There is an economic and climate crisis, the labour movement needs to manoeuvre a 'net zero mandate' with regard to jobs.

Construction featured in the debates alongside low carbon vocational education and training (VET). Various speakers addressed architect training, with its emphasis on aesthetic design to the detriment of technical content and the role of tick-box green assessment, such as LEED and BREEAM, where

there is little feedback from the actual building quality. The need to reinstall due to poor quality work has led the Vancouver insulation trade union local to develop high quality training and specification to place its members in a commercial advantage with the additional satisfaction of a more comprehensive understanding of their occupation. The debate included the broader quality issues for construction occupations, its link to the 'gap between design and performance' that lies at the heart of the challenge to hit the low energy targets identified by the Energy Performance of Buildings Directive, the EU's demand for 'nearly zero energy buildings'. Great interest was shown in construction VET as a component of the struggle for a comprehensive response to climate change, impact resilience and adaptation where clear links were made between low energy policies and their implementation by an educated workforce imbued with 'occupational capacity' based around thermal and energy literacy rather than narrow task-related competences.

The conference finished with the call to draw in more trade unions and the general public to shift the common sense perception of global warming and the role of labour – a reference to the social and political power of Gramsci's concept of hegemony. The trade unions remain one of the few, if not the only, social organisation representing the working class that are democratic and have the structure and capacity to campaign and challenge the existing order. The W3 participants expressed the hope that the conference may be seen as one of those moments of realignment, of a worldwide struggle that links the working class and disaffected to fight for a sustainable future. The W3 organisation, the organising committee, needs to be congratulated for providing a platform for this discussion. W3 now needs to provide specific ideas and guidance for trade unionists who wish to join the call for action. Perhaps these will include a set of general negotiating strategies for encompassing environmental policies into contract conditions alongside a series of specific job-related measures such as those proposed by Canada's Postal workers

union. This work is currently in development with a call for creating an open-platform, whilst conference proceedings are being developed into a series of theme-based publications.

REPORT CLR BRAINSTORMING,

University of Westminster, 27 February 2014

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Linda Clarke introduced by explaining how the agenda emerged from contributions sent prior to the session and by inviting any further suggestions for the agenda. The original agenda items sent out included: 1) the transformation of labour relations, 2) employment conditions and wage policy, the 3) transformation of the construction industry as a whole (including people and planet - sustainable construction work). To these were added (to 2.): by Jan Cremers the future of social partnership, the deregulation of health & safety and other social legislation; and by Linda, vocational education and training.

Jörn kicked off the brainstorming meeting discussing what transformation meant from his viewpoint; he argued that the transformation of the employment conditions in the sector (and indeed in the wider economy) since the 1970s is a product of transformations in the labour-property relationship. He asserted that the conditions of employment and the labour movement have been on decline. So, developments in wage levels have not kept up with productivity improvements. Thus, from Jörn's perspective, discussions on the global financial crisis must not ignore this historical context. He also opened up the discussion by raising the question of the role of CLR. More specifically, he wanted this brainstorming session to sketch out a programme of activities (through existing vehicles) to see CLR play a more proactive role in stimulating debate with the trade unions in moving forward with strategies and that go beyond defensive reactions. Therefore, in Jörn's

view, a useful outcome would be CLR-News, CLR-Studies, seminars, research and meetings that would encourage continuous debate to identify valid, emerging questions.

The transformation of labour relations, the case of the construction industry

Rolf Gehring raised three key questions. First, what are the models that exist in helping us understand the transformation of labour relations? Secondly, is this transformation also connected to wider societal shifts? Thirdly, is it really viable to go back to past models? Jörn responded by arguing that transformation of the production process through the labour process could be viewed as transformations in humanity and the ways in which we use natural resources. He also argued that the transformation he observed since the 1970s is far from accidental. He also noted that non-traditional employment relations cannot be repaired in ways familiar to us from the past. The owner of the means of production is becoming less reliant on traditional, patriarchal modes of ownership. Thus, we need new ways of addressing labour relations in this changing context (which he suggested could be argued as the 'liberation of labour'). To this end, he also observed that the nature of property has changed from direct to more indirect means of ownership (e.g. shareholding, innovative financial instruments, pension funds etc.). He argued that the financial crash was a symptom of the global reach of this problem. Conversely, the corporation as we know it has transformed into ephemeral units of production, concerned with payment of dividends and interest rates rather than making profits. Jörn also observed the marginalisation of collective bargaining, and how the wage share has been on a decline. He noted that the financial institutions and the financial instruments (e.g. mortgages and interest rates) have not been held to account in the collective bargaining process. Consequently, the gap between the rich and the poor has been intensified, and the growth of this gap not arrested. Thus, he argued for wage labour as a civil status, and called for equitable wage levels in line with productivity improvements, and an agreed

wage scale for all wage levels (e.g. 1:10, 1:20), regulated ideally at an international level (transcending the nation state). Paul Chan pointed to the fact that employment contracts are concluded without employer-owner responsibility. Werner Buelen hinted at the dwindling trade union mandate associated with the rise of different forms of employment. Vian Ahmed agreed that a regulating body is necessary to link wage development with productivity, to integrate migrants through a coordination of initiatives.

Following Jörn's discussion, questions were raised on the role of CLR, especially since there are other researchers or movements addressing some of the problems Jörn has raised here. It was also noted that the coverage of collective agreements has changed over time, and varies across different countries. CLR can play a critical role in brokering research collaborations across Europe to capture the state of affairs of employment relations and providing the evidence of experiences of the workforce including the lower ranks of the subcontracting chain. CLR could also play a more active role in campaigning work (e.g. tackling global jobs crisis, social protection floor, financial transaction tax, wage scale, and so forth). There is also the possibility of looking at existing instruments, e.g. qualifications cards, to regulate the workforce. There is acknowledgement that the landscape is much more complex today, with increasing financialisation and indirect capital ownership that the trade union movement has not kept up with (e.g. the lack of representation of self-employed, migrant, undeclared and precarious workers). It was also recognised that the instruments that trade unions use to secure better labour relations and employment conditions need transforming. There was, however, acknowledgement that some trade unions are becoming more progressive in terms of representing workers in non-traditional categories (e.g. women, temporary workers). Questions were also raised regarding what research questions members of CLR can take forward, and sources of research funding to support such investigations.

Construction labour, employment conditions and wage policy

Hans Baumann kicked off this theme with a discussion on minimum wage. He recalled a first conference organised in 2005 to talk about this issue. Reflecting on developments since then, Hans noted the intent then of developing coordination mechanisms and harmonisation of minimum wage (at a level of 60% of average wage) across Europe. There will be a referendum in Switzerland in May 2014. Linda Clarke noted that debates are ongoing in Britain on the effectiveness of minimum wage policies; there is evidence that the minimum wage is holding wage levels down and that differentials between wage levels for general labourers and skilled workers are growing. There are proposals to set scales of different minimum wages on the basis of occupational qualifications. Questions were also raised about the role of the 'living wage' in the sector, exploitation of migrant (and less visible) workers, and the growing complexities over the make-up of the wage and loopholes that potentially exacerbate wage inequalities. It was also recognised that, in some cases, the minimum wage is lower than the level set through collective bargaining and this introduces conflicting dynamics. It is also recognised that a debate needs to be had on the function of the minimum wage as this can differ from country to country (in some countries the level is related to purchase power and indexed to inflation, in others it builds the floor for the collectively agreed wages, and again in others there is no relation anymore with the real paid wages). Jörn suggested that we should look carefully at what the living wage is used for, especially in terms of the relationship between labour and property.

Linda Clarke raised the issue of the demise of apprenticeships in the industry, and how there is now ironically a lot more qualified people (educated in the further education system, but not through practically-applied work placements) but not enough skilled people. Linda also noted that this is deeply connected to the transformation of the employment relation-

ship. So, an apprenticeship is more than just about the development of knowledge about how to do the trade, but it also involves a socialisation process. So, the demise of the apprenticeship system is also an indication of further individualisation of the employment relationship, which in turn would have ramifications for the future of collective bargaining and the trade union movement. It was, nevertheless, noted that increasing prefabrication and the introduction of new materials in the construction production process would implicate the ways in which we think about training and how the idea of 'skill' is constituted. It is important to recognise that the industry is a very broad one, and that discussions on training and skills need to account for such plurality. Questions were also raised as to what role the public sector can play in enforcing training requirements and work organisation on public-sector projects. In relation to Britain, it was warned that subsidies for apprenticeship are often wasted as the apprentices are simply used as cheap labour.

Hans Baumann raised the issue of xenophobia and migration, in part triggered by recent developments in Switzerland. The threat to free movement of workers could potentially create problems for employment in the Swiss construction industry where around (if not over) 50% of the construction workforce is an immigrant worker. Hans also observed the wage gap widening (e.g. between North and South) and how this is changing migratory patterns and creating rising tensions especially in the receiving countries. It was also suggested that rising xenophobia could be viewed as a response against neo-liberal policies and ideas.

Topical items at EU level

Jan Cremers updated on developments in Europe at reforming several health and safety regulatory instruments to reduce the bureaucratic burden (known as Regulatory Fitness and Performance Programme or 'Refit'). These changes would have an impact on worker rights and participation. This potentially reverses previous efforts of harmonising regulatory

practices across the European Union. On a related note, Rolf Gehring also stated that there is a shift in EU policy in that interventions have increasingly to be framed with SMEs in mind (official definition of SME is any organisation that employs up to 250 employees). This would have implications for the construction industry, which is dominated by SMEs.

Werner Buelen mentioned two important files that need attention: one is about the research on the possible introduction of a European Identity Card for construction, the second on the positive changes in the public procurement regime. For the first item he would like to ask the advice of the CLR-network, once the study is finalised. The second item deserves broader attention; perhaps some CLR colleagues could prepare a guideline for the trade unions on how to deal with the changed legislation.

Questions were also raised about building a sustainable community, partly as a follow-up of a seminar that was held in November 2014 with CLR-participation. Are we sufficiently concerned about finding a meaningful balance between people, planet and profit objectives, or are the policy responses to the financial crisis a case of reverting to business-as-usual and lining the pockets of developers?

The discussion connected back to the provocation started by Jörn about the changing relations between labour and property. The image of the industry is also an issue that needs to be addressed in order to think about the future of a more inclusive workplace (e.g. women and other minorities in construction, ageing workforce etc.).

Conclusions

Priorities for CLR were discussed, including:

1. Campaign against deregulation (the so-called Refit)
2. Policy development to facilitate and protect migrant workers
3. Develop democratic institutions for enforcement of labour rights, statutory wage scales, and integration of vocational education and training within the general education system

4. The urgent role of public procurement and the social agenda
5. Implications of climate change, environmental consciousness, energy reduction and retrofitting
6. Vocational education integrated in the general education system
7. Historical perspectives of the trade union movement, with a view to look into future possibilities
8. International dimension: the experiences of mega-projects in Qatar, Brazil etc.

Overall there should be more attention to Eastern Europe.

These priorities could be topics that can be framed as the themes of future seminars, CLR News and CLR studies. A provisional list of CLR-News and sub-editors:

2014

1. Energy saving construction (Linda Clarke and Colin Gleeson, with Sven Ljung)
2. Newcomers, especially migrants, and health and safety risks in construction (JC)
3. Public procurement (Jan Cremers and Werner Buelen)
4. Against further deregulation, including of H&S/CDM regs (JC and RG)

2015

1. Statutory wage scales, minimum wage coordination, democratic institutions for labour rights (HB, JJ)
2. Reform of vocational education (Linda Clarke and Rolf Gehring)

CLR-Studies, proposed:

1. Against deregulation (JC and RG), perhaps combined with a seminar in Brussels.
2. Reform of vocational education, perhaps as a research report (LC and RG)

Seminars:

Minimum wages, statutory wage scales, labour rights attached to a civil status, see CLR-News 1/2015.

Paul Chan,
paul.chan@manchester.ac.uk

REPORT CLR AGM

University of Westminster, 28 February 2014

1. **The previous CLR AGM** occurred late in 2013 as it had been decided to combine the annual meeting with the launch of the book arising from the asbestos study. Rolf reported that the book formed the basis of campaigning for an own-initiative report at the European Parliament. Two related aspects were discussed with the European Parliament, including recognition of asbestos-related diseases and appropriate compensation instruments. Rolf noted that the book was well received and in the meantime disseminated to a large range of stakeholders, including the labour inspectorate. Among the EFBWW affiliates the response was mixed, perhaps the cost of the book was potentially prohibitive for some trade unions. The work was presented at a scientific conference on asbestos-related research, and the Finnish labour inspectorate is considering the use of the book as training material. In the autumn a conference on asbestos exposure is planned with mayors, a stakeholder that is sometimes forgotten. Action: Rolf and Linda to liaise with Kevin Williamson to bring along some of the publications to the UNITE conference.
2. **Four issues of CLR News** were published over the last year, on 'International Wage Coordination', 'Health and Safety' (including a feature on the asbestos study), 'Socio-economic Equality', and 'Inclusion of Migrant Workers' (based on an internal EFBWW-survey).
3. Linda also reported on **work undertaken in collaboration with EFBWW** - 'Bolster Up' - to develop a qualifications framework for upholstery and cabinet-making in the making of furniture.

4. Jan Cremers reported on the **financial situation for CLR**. He noted that the state of income and expenditure has been very stable for a long time because most activities such as the 'In search of cheap labour' or the 'Bricklaying' projects were paid out of external project funding and not CLR's accounts. Most of the expenditure of CLR is expended on accountant fees. In 2013, CLR received extraordinary income of €9,300 received from the European Parliament as compensation for the asbestos research and related work for the own-initiative EP-report. There is a surplus of €4,502.26 for 2013 because a long-term reservation for publications was activated for the asbestos-book. Joern asked if there were funds available for translating articles for CLR-News into English. Jan confirmed there is no budget for this. Hans Baumann reported that UNIA is keen to translate one or two articles a year, and it was suggested that we translate the longer articles/publications. The financial accounts were accepted at the AGM.

5. **CLR Brainstorming Outcomes:** Priorities for CLR Brainstorming were discussed, including:
 - a. Develop evidence base for supporting campaigns against deregulation (with priority on looking at health and safety and the threat to the CDM regulations) - the complexities of regulation were also discussed. So, for instance, it is not just deregulation that is the matter of concern, but how the introduction of new regulations might reverse or enhance the intended consequences of past regulation. Action: Rolf Gehring and Jan Cremers to reflect on the priority of developing evidence base for supporting campaigns on regulation and think of a few possible scholars to work on a CLR-study.
 - b. Policy development to promote and protect the rights of migrant workers - a CLR-News issue is in progress that looks at migrant worker experiences and health and safety consequences across varying contexts, from Italy, Portugal, Qatar and Mexican workers in the US.

- c. Democratic institutions for the enforcement of labour rights and statutory wage scales - there is a need to look into the status of the worker irrespective of the employment status, and how their rights can be institutionalised and enforced. It was agreed that a CLR-News issue could focus on reporting the current state of affairs and developments in the concepts of the statutory minimum wage and perhaps 'living wage'. Action: Ernst-Ludwig and Hans Baumann to liaise and discuss the possibility of updating the situation in a CLR-News (early 2015). Jörn suggested that this subject ought to be discussed within representatives of the EFBWW member unions in an international seminar linked to a publication in CLR-Studies.
- d. Integration of vocational education and training within the general education system. Action: Linda Clarke together with Vihan Ahmed and Colin Gleeson to prepare perhaps the second issue of CLR-News in 2015 and a publication in CLR-Studies.
- e. The role of public procurement and the social agenda - possibility of a CLR-News issue at the end of 2014. Possible contributors include Fiona Murie (on international experience, social justice and people's capital in PPP), Alex Murray (on governance issues in PPP) and Tessa Wright (on equality and diversity and PPP). Action: Jan Cremers and Werner Buelen to liaise.
- f. Implications of climate change, VET for low energy construction and retrofitting - possible issue in early 2015. There is an issue on 'sustainable construction' in the pipeline for early 2014 based on an ETUI-workshop for works council members that Jan Cremers, Colin Gleeson and Rolf Gehring organised in November 2013 and on a Canadian conference on climate change also held in November.
- g. Historical perspectives of the trade union movement, with a view to discuss future strategies - there is also the possibility of looking at how the social partners and social dialogue are changing – Ian Fitzgerald, Linda Clarke and Paul Chan interested in following up.

- h. International dimension: the experiences of mega-projects in Qatar, Brazil etc.
- i. ID cards and arduous work: Werner Buelen and Rolf Gehring reported on ongoing initiatives that look at reviewing evidence on the use of ID cards and health and safety, as well as the nature of arduous work in various occupations and problems of not reaching pension age. These could be reported in a future CLR-News issue.

6. Reports and planning/seminars and conferences.

Jan Cremers reported that he had been working with *labour inspectorates* following the work on 'In search of cheap labour'. There remains strong interest in France, Portugal, Poland, the Baltic States, Finland, and the Benelux region. The labour inspectorates have formed a group, which produced a report (Jan served as a steering group advisor). He noted an interesting development in that the Polish authorities have, for the first time, recognised this to be a problem. Work continues to identify good practices in this area. In the autumn a larger meeting with the social partners (in construction and agency work) is planned in this frame. EFBWW is involved with several national trade unionists. Next to this Jan Cremers is involved in an *ETUI* book-project on '*social dumping*'. His contribution is dedicated to practical experiences with posting in construction and cases of letterbox-companies in transport. Some of the AGM-participants recognise the letterbox examples that he gives also in the construction industry.

Rolf Gehring informed on a number of initiatives/projects, including: the *AB-Clean campaign* linked to the asbestos research, and another project that looks at the *compensation regimes for asbestos-related illness*. Rolf is also involved in an FP7 project called '*Nano-scaffold*', which seeks to investigate the implications of the use of nanotechnologies in the construction industry, and to develop a precautionary strategy. Rolf reported on three forthcoming events, in which the work on asbestos will be disseminated, including the BEWI conference in May in Vienna, the World Congress on Health and Safety in Frankfurt am Main, and the Mayors' conference.

There was also a discussion on trafficking in the EU, how far this is a major area for construction. There have been examples of truck drivers from the Philippines and Chinese workers in Poland. The issue is also related to gangmasters and undeclared labour.

7. Current projects

Paul Chan reported on work he is undertaking on ageing and mobility, looking at biographical transitions in relation to a. life-changing moments and b. sleep – how building workers sleep.

Vian Ahmed spoke of her work on BIM (Building Information Modelling) and her concern that considerations in relation to labour were excluded from this. She is looking for partners.

Jan Cremers described his activities in relation to: a) an ETUI book on social dumping and b) the use of letterbox companies – linked to the coordination of social security and what he termed ‘hunting crooks’.

Colin Gleeson spoke about his visits to Indonesia and Taiwan to investigate low energy building, as well as work on qualifications and low energy construction.

Hans Baumann described the issues he is involved in with Denknnetz, the Swiss union think tank, including on

- i) European tax avoidance and harmonisation;
- ii) pension funds, and the campaign to replace capital based company pensions by state funds
- iii) climate change and democracy

Joern Janssen described his work with the French-based *Institut européen du salariat*, in particular on the role of the employer.

Judith Ryser spoke about the work she has been doing on Ecocities in Asia.

Linda Clarke described three projects she is involved in:

- i) VET4LEC (vocational education and training for low energy construction) for which it is hoped to submit a proposal
- ii) The new agreement and possible project on climate change and work with York University, Toronto

- iii) Oral labour history of building workers in the 1970s, for which a proposal is being prepared.

8. Any other business

Jan Cremers asks the AGM-participants what their opinion is regarding the CLR-website. His feeling is that, although the site is basically used for downloading documents (also confirmed by figures on visitors), the use by members of the network is non-existent. He considers withdrawing from this task. The suggestion is to consult the EFBWW-secretariat for the future web mastering. Colin Gleeson offered that a colleague looks at the structure and lay-out of the site. However, according to Jan Cremers the problems are with the structural web-mastering and the content management, not with the renewal of the site.

Review essay

Tom Lannon

Hugh D’Arcy (2013): A Bible of Discontent. The memoir of Hugh D’Arcy, bricklayer and trade unionist; ProBE/CLR publication: University of Westminster, London, 118 pp.

This book depicts the life and times of a bricklayer trade unionist and communist who served on the Scottish district committee of the Communist Party of Great Britain.

Hugh D’Arcy was born the sixth of twelve children in the row in Pipe Street Portobello in 1919. One child called Maureen died at four years of age from diphtheria. Both his parents - Jay Dee, as his father was called, and his mother - worked at the Craighall Colliery, better known as the Klondyke after the historical ‘gold rush’. Jay Dee worked at the face and Hugh’s mother at the screens or tables, as they were known, which was a conveyer belt where stones and rubbish were separated from the coal by hand above ground level, and of course the only ones who found gold were the pit owners.

Hugh attended St. Johns Roman Catholic School Portobello and had a drive for literary subjects, which stood him in great stead, in particular while serving his apprenticeship, and becoming a great trade union leader at the highest level having become a member on both the AUBTW [Amalgamated Union of Building Trade Workers] and UCATT [Union of Construction, Allied Trades and Technicians].

As well as quantity there is also quality, which gives the book an edge, and all told makes it a riveting and excellent read about a legend called Hugh D’Arcy. What I have done is select some passages taken from the memoir, such as:

‘I was always active in the union and served every position in the branch from a shop steward to the federation steward, which was a convenor and officially recognised as shop steward - which meant your credentials were issued by the regional organiser for the NFBTO [National Federation of Building Trades Operatives] as these were official appointments, though unpaid - and then from Branch Committee to Branch Chairman, Branch Secretary then Delegate to the National Conference. I became a delegate

and then was elected to the Executive of the AUBTW from 1964. Then later on I was elected from that body to the new Union, UCATT, a new merged union. I became an executive member of that for the remainder of my time. I was elected Chairman of the Union and President of the Scottish Trade Union Congress so I was an active member from an early age.' (P.15)

Hugh D'Arcy had a gift and indeed a great literary drive, the ability to read and write. He read *Oliver Twist* of Charles Dickens, *Hunchback of Notre Dame* and *Les Misérables* of Victor Hugo, Charles Darwin's theory of evolution, to mention but a few. Hugh showed great overall promise at a tender age passing his qualifying exam as a 12-year old and therefore going on to read Shelley, Shakespeare, Burns, Marx, Engels, Stalin, O'Casey, Conolly, Yeats, and James Joyce. He also read the Russian classics, Fjodor Dostojewski, Leo Tolstoy, Maxim Gorki, Alexander Pushkin, Ostrowski, I am sure there were more.

Hugh started work as a 14-year old 'as a van boy in Portobello Laundry' (p. 9), which is part of Edinburgh. After a year, turning 15 years old, he started work as an apprentice bricklayer, influenced by his elder brother, who was a bricklayer by trade. And that is where it all started, about 1934 in and around Edinburgh. He also spent a couple of years at the trade in Willesden, North West London and, by the time he had become a bricklayer, he went into the army. After he was demobbed in 1945 he went back to his trade as a bricklayer to rebuild the houses that Hitler had bombed. Wages around 1946/7 were 'five pounds eight shillings [a week], that was my wage after the war, which, I would say was in value, for what you could buy, was a greater, a bigger wage by far than what the basic wage is now.' (p. 12) He soon became active in the AUBTW:

'I joined the union when I was an apprentice in London and that was voluntarily. I joined when I was an apprentice under the influence of my brother.'

Review essay

The Welfare State was under constant attack and cuts in wages by 10% and unemployment benefit were carried out by the National Government of Conservatives and Liberals. You then had National Union Workers' Unemployed marches in 1932-4. They marched from Scotland and were met in London by 200,000 to greet them. Despite the conflict, it did not deter bricklayers, labourers, and other craftsmen joining their respective trade unions like AUBTW, ASW, Painters, TGWU, Railwaymen, Shipbuilders and Fire Brigades.

Then in 1939 the Second World War broke out and building workers were called up to fight against Germany, with many being killed and, therefore, never to return. In 1945, after the war, the building trade opened up to rebuild the bomb damage and, of course, houses for the returning soldiers and the many homeless in need of a roof over their heads as well as many industrial buildings of companies who had been blitzed during the war.

The Tea Break Strike May 1946: In 1946 the employers decided to stop the tea break in Scotland for all working in the building industry, that there would be no tea break from the 12th May 1946. However, building workers had a different view, as the tea break was only introduced during the war and, indeed, was unpaid. Hugh D'Arcy played a pivotal role in this campaign, which was fought in Edinburgh and at national level.

He presided over the 1977 Scottish Trades Union Congress at Rothesay, which was no mean feat. He was also president of the UCATT National Delegate Conference at Southport in 1984 and in my 43 years membership of UCATT I have attended nine consecutive TUC Congresses, but none will compare with the presidential address delivered by Hugh D'Arcy in Southport in 1984. It was an education in the sense that US President Ronald Reagan and the British Prime Minister Maggie Thatcher were attacking peoples' civil liberties and democracy whilst, with the constant threat of nuclear war, threatening the very planet on which we work and live. At

both conferences Hugh D'Arcy highlighted issues such as the demonstrations called by the Civil Service Workers supported by wide sections of other workers protesting against the sacking and discrimination of workers at GCHQ Cheltenham for being trade union members. The hypocrisy of Maggie Thatcher's attitude was well and truly noticed by thousands of Civil Service Workers on this day. In the president's address to the UCATT National Delegate Conference at Southport in 1984 he said, to quote (p. 57):

'I want to ask Thatcher, who is a fervent admirer of Solidarity in Poland, why it is that to be a member of Solidarity in Poland is a high mark of patriotism in that country, yet to be a member of trade union employed at Cheltenham is a mark of treachery to Britain? But then words, like rights and freedom, mean entirely different concepts to different people especially people from different classes of society. I prefer Shelley's concept of freedom, "What is freedom? To a labourer thou art bread and a comely table spread".'

From his daily labour come to a neat and happy home!

As I outlined in my opening remarks, this memoir is an excellent read for construction workers and indeed students, and to the present generation of building workers. It will give them an idea of what can be achieved by the collective approach of building workers or any group of industrial workers based on the premise of solidarity in a positive manner. I commend, 'A Bible of Discontent. The memoir of Hugh D'Arcy, bricklayer and trade unionist'.

Downloadable as an e-book (ISBN: 978-0-903109-42-0) from: <http://www.westminster.ac.uk/probe/projects/constructing-post-war-britain> or from <http://www.clr-news.org/CLR-Studies/Probe%20D'Arcy.pdf>

Or obtainable as a hard copy (ISBN 9780903109413) from Linda Clarke (clarkel@westminster.ac.uk) for £10 or €13

Review

Hans Baumann

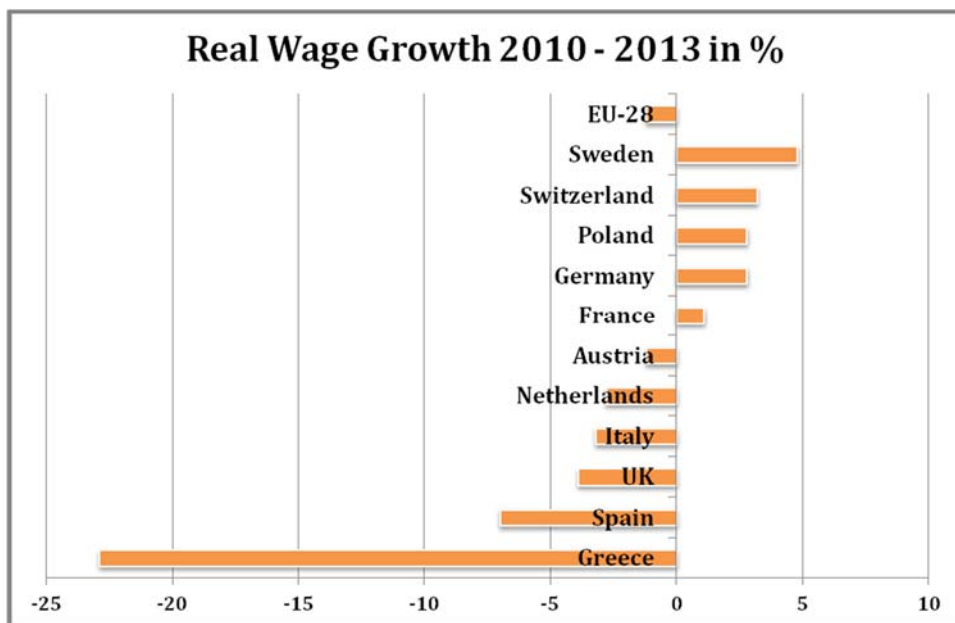
Thorsten Schulten: **Europäischer Tarifbericht (European Wage Report)**, In WSI-Mitteilungen Nr. 8/2013

The most recent survey about the development of wages in Europe continues to be under the auspices of the austerity crisis in many European countries. In 2012 real wages declined in 20 of 28 states, in 2013 still in 16 of 28. Looking at the average of all EU countries, real wages have fallen in 2011 and 2012, whilst in 2013 a small plus of 0.2 percent will probably be achieved. However, these averages are composed of an extremely differentiated development, as apparent in the graph about wage development between 2010 and 2013 in some selected countries. Only in a few Western European countries such as Sweden and Germany real wages have risen markedly. This was achieved thanks to better collective agreements. In Germany, the wages of employees covered by collective agreements therefore rose a little more than average wages. We can add to these a few central East European countries with positive wage developments. In other countries, such as France and Austria, wages have been stagnating in recent years, whilst in Great Britain and the Netherlands they declined significantly. The austerity crisis and 'structural reforms' of the Troika have pitilessly impacted on wage levels in Southern Europe. Whilst wage losses of Italian employees of 3.2 percent still remained moderate, employees in Spain suffered a sharp cut in their living standard through a real-wage loss of more than 7 percent in four years. To a similar degree, real real-wage losses occurred in Portugal, where the system of collective bargaining is in a process of disintegration. The situation is even more desperate in Greece: purchasing power has literally collapsed by minus 23 (!) percent. The situation in Cyprus and Hungary is similarly sinister.

As usual, Thorsten Schulten also calculates the balance of distribution, i.e. the deviation of the real-wage from productivity development in Europe. Given the decline in real wages it is not surprising that the balance of distribution also looks bad. All the 28 EU countries present a negative balance of

distribution over the last four years. The result for the overall-European average is a minus of more than 5 percent. This is the level at which the distribution of gross earnings in the European Union has shifted from labour to capital.

The unfavourable development of wages and the drifting apart of wages in Europe will not be stopped this year either. According to Thorsten Schulten, given the persistent assaults on collective bargaining systems, the pressure on wages and deflationary politics of the European Union will not lead to change in the short run.



Source: Th. Schulten, Bundesamt für Statistik BfS

Project announcement

Urbanization from below: comparing precarious construction work in Toronto, Canada and London, UK

Based on upcoming fieldwork in Toronto and London, this research project will investigate and compare the factors that make temporary migrant workers in the construction trades vulnerable to employment insecurity and exploitation. This project involves collaboration between Dr. Michelle Buckley, Department of Human Geography at the University of Toronto Scarborough, and Professor Bridget Anderson of the Centre for Migration, Policy and Society at the University of Oxford. Drawing on previous research on precarious migrant work in the construction trades in Dubai, United Arab Emirates (Buckley 2012; Buckley 2013), research into migrant work and employment across a host of sectors (Ruhs and Anderson 2011) and the relation between immigration controls and precarity (Anderson, 2013), this project explores how a comparative lens can generate insights about the conditions that produce precarity among migrants employed in urban construction sectors.

This project has several objectives, which are: to document key transitions in the national immigration regimes and transnational recruitment practices governing the incorporation of temporary migrant construction workers in Toronto and London's construction trades over the last 10 years; to identify how factors such as employment contracts, immigration status and employer relations intersect in these construction labour markets to make migrant workers vulnerable to employment insecurity and/or workplace abuses; to create a framework for internationally comparing temporary migrants' vulnerability by developing an Index of Precarious Work specifically tailored to migrants employed in the construction trades; to advance scholarly understandings of urbanization by theorizing the role that precarious migrant construction labour plays in these processes, and to conceptualize how economic precariousness and labour market inequality in urban construction characterize the relations of contemporary city-building. This

project is funded through an Insight Development Grant (2013-2015) by the Social Sciences and Humanities Research Council of Canada. For more information please contact Dr. Buckley at mbuckley@utsc.utoronto.ca.

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