



CITY BUILDING (GLASGOW): an inspirational model of low energy social housing and public building production

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Introduction

City Building is a not-for profit building organization with an in-house training centre, a large apprenticeship scheme, and a highly unionized, directly employed workforce. A visit was paid to City Building (www.citybuildingglasgow.co.uk/) on 23 May 2017 as part of research by University of Westminster's Centre for the Study of the Production of the Built Environment (ProBE - www.westminster.ac.uk/probe) into the role of workers and their trade unions in the transition to sustainable construction. *Green Transitions in the Built Environment* (GTBE) is a study carried out as part of ProBE's partnership with York University, Toronto, Canada in a seven year, international programme, known as ACW (<http://www.adaptingcanadianwork.ca>). The aim is to investigate trade union policies and engagement in initiatives in the area of sustainable construction. The research is comparative and identifies case studies illustrative of trade union involvement in four European countries (Denmark, Germany, Italy and UK/Scotland) as well as in Canadian provinces (British Columbia and Ontario). The concern, in particular, is to identify and promote 'good practice' examples and document, for instance, associated terms and conditions of employment for workers, vocational education and training (VET) programmes in low energy construction (LEC), and the extent that green transition pathways prioritise workers' interests alongside the protection of the environment. City Building (Glasgow) in Scotland provides one such example, particularly in the context of a sector dominated in the United Kingdom (UK) by sub-contracting, self-employment, agency labour and a highly fragmented and restricted VET system.

Background, current work and ethos

City Building (Glasgow) Limited Liability Partnership (LLP) was formed in 2006 from the original Direct Labour Organisation (DLO) of Glasgow City Council, as an Arms-Length External Organisation (ALEO). Since April 2017, Glasgow City Council and the Wheatley Housing Group jointly own its repair and maintenance division. The parent company of the Construction and other Housing Association Divisions is Glasgow City Council. Collectively, they directly employ 2,200 workers and a 2016 University of Strathclyde study, *The Economic and Social Impact of City Building on Glasgow*, estimated that it supports a further 2,000 jobs through its supply chain, and contributes to the generation of thousands of other jobs in and around Glasgow.

In the last ten years, City Building has developed as a successful social enterprise with sustainable and high standard employment and construction practices. As well as continuing to be responsible for maintaining all Glasgow City Council's building stock and for managing its new construction projects, it competes for work in the open market, developing expertise in low-energy construction and building on its history of social housing production. Public sector schemes include social housing, care homes, schools, homeless hostels and student accommodation, built to varying standards of energy efficiency, including Ecohomes Level 4 and Passivhaus. Through some high-profile projects (e.g. sites for the Commonwealth Games) and clients (e.g. Scottish Energy, NHS, the Prison Service), it has come to be recognized as a contractor with the capacity to deliver large projects to a high standard.

What sets City Building apart from any other construction company are the strong social ethos and good employment practices that guide its 'business model'. Whilst operating as a successful business and making a substantial contribution to Glasgow City Council (reported to be £5-6 million a year), it is run as a social enterprise and its operations are not driven by profit. Rather, the priority is given to sustaining the current model of employment and training, and to growth without compromising quality and labour standards. All staff are directly employed and nurtured for the long term. Almost all the personnel interviewed as part of this study had begun as apprentices with City Building, including the current Executive Director and the plumber trainer who had been with the organization for 44 years. Further education is promoted to enhance employee qualifications, with many employees undertaking Higher National Certificate (HNC) and degree level courses within their field of expertise. Employees and managers are also kept up to speed with new and emerging technologies by attending workshops and continued professional development courses relevant to each discipline. The cost of further training is mostly met by City Building, with the time off work required shared between staff and City Building. Employees have 37 hour contracts, with any additional hours paid as overtime. City Building does not engage labour-only sub-contractors and any sub-contractor employed needs to comply with a framework agreement that sets standards for quality of work and terms and conditions of employment, implying a reduction in and better regulation of the subcontracting chain. Conditions of engagement include, for example, that apprentices are employed, locally sourced materials are used, and Construction Skills Certification Scheme (CSCS) cards are up to date.

Another unique feature is the involvement of the trade unions that played, historically, a significant role in shaping the ethos that underpins City Building's operations. The unionisation rate is reportedly nearly 100 per cent, across three unions: UNITE (services, plus former UCATT joiners), UNISON (office staff) and Community (RSBi staff). The Joint Trade Union Council includes representatives from each trade union and is actively engaged with the management of City Building at the highest level, attending quarterly meetings of managers and also taking part in specific meetings such as the Health & Safety Working Group, in what is described as 'a great relationship'.

Training and apprenticeships: Queenslie Training Centre

City Building has its own Scottish Vocational Qualification (SVQ) approved *Queenslie Training Centre*, and runs a comprehensive SVQ Level 3 Apprenticeship programme in mainstream construction occupations, including Joinery, Plumbing, Electrical, Painting and Decorating, Roof Slating and Tiling. The 4-year programme combines study, simulated learning in workshops, and on-site practice in both new construction and repair and maintenance.

The apprenticeship programme is popular, described by the Centre as 'the best in Scotland', and enrolls 60 new apprentices every year, who are selected in a two-stage process, out of 500-600 applicants. The intake is diverse, including female apprentices across all trades; indeed, it is reported that 25% of all female apprentices in Scotland train with City Building. It also includes one or two care leavers every year, referred by the City Council and supported through a special programme that

caters to their particular needs. The trainee trade mix depends on demand from projects, on-going and future. The programme is structured such that the amount of classroom time and theoretical learning decreases gradually over three years; the first year is classroom based, the second year is equally divided between classroom and site, the third year is largely learning on site with a smaller element of classroom time.

The apprenticeship programme is also distinguished by a strong social and personal support programme that ensures very low drop-out rates (95% completion rate) and an all-round training for the young people joining City Building. The training begins with an intensive 6-week induction that covers health and safety as well as preparing young apprentices for independent and responsible lives as adults. Apprentices also take part in many voluntary activities that combine supporting local causes with learning and that help to develop social skills. A recent example includes the redecoration of a local care home by City Building apprentices as part of their training.

Upon completion, apprentices are supported to find employment, which includes interview practice and CV writing, but in the last ten years City Building has kept on 80% of its apprentices. Its position as a trainer, employer and managing agent implies that the apprentices receive an all-round service and are well supported and positioned to continue into permanent employment with City Building. All apprentices are guaranteed a job interview and, after an initial short-term contract, many stay on as permanent employees.

Training in low energy construction is trade specific; for example, insulation is taught as part of Carpentry and Joinery. Plumbers, Electricians and Gas engineers, in their final year, study 'Emergent Technologies, using teaching and learning materials developed by NAB (National Assessment Bank). For example, plumbing apprentices complete the following units:

- (a) Working principles, Installation Options and Regulatory Requirements for Micro-Renewable Technologies, Water Harvesting and Recycling Technologies (Unit F8XJ), delivered to all plumbing apprentices.
- (b) Emergent Technologies Combined, including, in addition to F8XJ, Solar Thermal Domestic Hot Water, Heat Pumps, Grey water/rainwater harvesting/grey water reuse. (Unit F9HD 04, requirement to complete SVQ Level 3 in Domestic Plumbing and Heating.



Photos: Boiler systems in the training centre

The plumbing apprentices interviewed appeared undaunted by the physics associated with comprehending energy efficiency. Although these courses are believed to provide a good grounding in RES installations, apprentices are expected to continue with their learning after starting employment, especially because this is a field that is constantly changing with technology.

In addition to the apprenticeship programme City Building runs a number of specific and Construction Industry Training Board (CITB) certified courses in, for example, health and safety, first aid, site management, power tool training, and IT packages.



Photos: Apprentice award ceremony and the training centre

Low energy construction projects

City Building has a growing programme of low energy building schemes and renewable energy schemes including solar thermal, photovoltaic, combined heat and power, ground and air source heat pump and voltage and boiler optimization technologies. It is also actively embedding energy efficiency and sustainability in its planning and operations. For instance, every building site is required to have an environmental plan. The design team has started to engage with the services team early on in the

process, as new technologies need to be incorporated into the design process from the beginning. In addition, the in-house Building Management Systems Team develops, implements and monitors control systems within Glasgow City Council and The Wheatley Group ensuring that buildings are performing as efficiently as possible, in many instances reducing utility bills by as much as 30%. These changes are set against a growing awareness of and investment in energy efficiency and renewable energy sources by the government and other local authorities and public bodies. The Scottish Government has set ambitious targets to reduce carbon emissions and to eliminate fuel poverty. Through its investment in energy efficient social housing and renewable energy schemes, City Building contributes to these objectives without compromising its social principles. Two low energy construction schemes were visited as part of this study:

Hillpark Drive, district heating network installation

This is the first large-scale off-grid district heating installation, utilizing a large scale air source heat pump as the primary heat source, to 350 properties at Hillpark Drive in South Glasgow. The project, which began in 2010/7, is part-funded by the British and Scottish governments (£3.5 million of the total cost of £5.5 million) and expected to reduce fuel bills dramatically and tackle fuel poverty among tenants of Hillpark Drive. The previous heating system relied on electrical storage heaters and was very expensive to run (up to £100 per week) resulting in high levels of fuel poverty among tenants. The new system could bring this cost down to as little as 60p a week. The scheme involves laying new pipes to property boundary (undertaken by a civil contractor) and installing new pipework to every flat (by City Building Services Department), replacing cold-water storage tanks and inefficient pumps. Twenty City Building employees work on the project including plumbers, electricians, joiners and carpenters. The energy centre, located next to the housing estate, is reported to be the biggest of its kind in the world. Its maintenance, as well as that required for the heat interface units installed in every flat, requires considerable expertise and will be provided by the City Building commercial team, which is also training apprentices to carry it out.



Photos: Air source heat pump system (above), with gas back up



Photos: District heating system from outside (left) and the estate itself (right)

Liddesdale social housing scheme, with low energy features

The low energy scheme visited is the Liddesdale development, situated in a deprived part of the city and forming part of the regeneration plans for the area; the local school was also built by City Building (to similar energy efficiency standards). Liddesdale consists of 70, 2-3 bedroom houses. Technical specifications are:

- Ecohomes Level 4 standard
- Timber frame and brick skin
- Double glazing
- Gas combination boilers
- Solar roof panels
- Standard ventilation
- PVC windows
- Insulation: external walls are 400mm, insulation thickness 140mm.

Upon completion, the houses are tested for air-tightness, along with checks for the habitation certificate issued by Building Control (checking for sound insulation, electrical work, access, and drainage), plus a National House Building Council (NHBC) inspection. The local authority is subject to much inspection, but turns this to an advantage by building to higher standards than the private sector. 100 workers are employed in the project, about 30% of who are City Building employees, the rest being provided by sub-contractors. City Building employees undertake the plumbing, roofing, central heating and internal gas works, while groundwork, brickwork, joinery and electrics are sub-contracted. One female apprentice was present (joiner) on the day we visited. Aspects related to LEC were taught on site by supervisors and experienced workers, with quality checked by the site manager before work could proceed onto the next stage.



Photos: City Building energy efficient social housing, including the Glasgow House (top left) and Liddesdale under construction

Other examples of energy efficient social housing are the *Glasgow House* (see photo), the first of the kind in Scotland, and timber-frame houses with pre-manufactured floor and roof cassettes manufactured by RSBi. These houses are characterized by: high levels of insulation; windows and sun rooms to suit an orientation capturing sun energy; simple forms of construction using locally-sourced and assembled materials; efficient heating systems using solar thermal panels; and education for residents in how to benefit from special features in their houses. Independent measurements show that these low energy houses demonstrate a two-thirds reduction in energy costs compared to a similar size traditional house.

Manufacturing division: Royal Strathclyde Blindcraft Industries

City Building has its own inspirational manufacturing division, the Royal Strathclyde Blindcraft Industries (RSBi), one of the largest supported manufacturing businesses in Europe. As a supported employment business for people with disabilities, the origins of the RSBi go back to the nineteenth century; it is the successor of the Royal Glasgow Workshop for the Blind, a factory for the blind set up in 1804. City Building took over its management from Glasgow City Council in 1997. With recent investment, RSBi operates from a large, purpose built and highly equipped factory, with the capacity to design and test products and to supply timber kits, UPVC windows and doors, and a wide range of kitchen and bedroom furniture, including soft furnishings for furnished accommodation providers, care homes and nurseries. RSBi supplies both City Building and external customers.

City Building continues to support the ethos of RSBi, which today employs 270 people, about 60% of whom have a disability or disadvantage. Workers have access to training and development

opportunities through RSBi's Learning Centre and to work-related and on-the-job training and participation in other courses delivered by learning partners such as Communitas (the Training and Education Arm of Community Trade Union) and the Workers' Educational Association (WEA). RSBi also has a School Vocational Programme, which includes 1-2 years' training and work experience for 15-17 year olds from Additionally Supported Learning (ASL) schools in Glasgow.



Photos: City Building's manufacturing division, RsBi

Summary

City Building Glasgow, therefore, represents a model for local authorities to learn and borrow from. Through the combination of different actors – The City Council, the Joint Trade Union Council, and the Wheatley Housing Group – it has developed a unique service: building low energy social housing, manufacturing the kitchens for this as well as the furniture for care homes, schools, etc., repairing and maintaining the Council's existing building stock, and embarking on an ambitious programme to improve its energy efficiency. However, it would be impossible to fulfil this programme without the skills and commitment of the workforce, building on the Queenslie Centre's comprehensive training programme, which includes energy literacy, and the good employment and working conditions provided for the diverse workforce.



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