

ADEILADU
ARBENIGRWYDD
YNG NGHYMRU



CONSTRUCTING
EXCELLENCE
IN WALES

Championing collaborative construction in Wales



ANNUAL REPORT 2015
BEST PRACTICE IN PURSUIT OF VALUE

About us

Funded by the Welsh Government, CEW is charged with improving the construction process in Wales.

Best practice works. It drives value, it helps create a sustainable built environment, and it enables construction to build a better Wales for future generations.

Our task is to ensure that the principles of collaborative working and delivery through integrated teams, as outlined by the Egan and Latham reports of the 1990s, become mainstream industry practice.

Our core activities are to foster collaboration, champion best practice and advocate a holistic approach to all forms of construction in Wales. As such we are an active, live link between Government and the building sector, acting as a conduit of ideas and influencing decision-making. We work with all parts of the industry – from the Welsh Government, local government and health authorities to developers, construction firms and SMEs – to turn good policy into even better practice.

We are the only cross-sector, cross-portfolio organisation serving the construction industry in Wales. Our core message is to encourage the entire supply chain to work as a team, procure collaboratively and consider the long-term impact of construction schemes – because this is the only

way to meet government targets on sustainable development, waste management, carbon reduction and community benefits.

Now moving into our 14th year, CEW has delivered hundreds of conferences, workshops, seminars and peer review events. We share knowledge and learning through Best Practice Clubs, networking groups and our Demonstration and Exemplar programmes.

We are more engaged with government and industry than at any other time:

- 5,000 stakeholders read our weekly newsletter
- 70 events are held each year
- Over a million man-hours of support have been provided by the industry
- Our Exemplar projects have generated more than £1 billion of value.

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The past 12 months have witnessed solid growth in Welsh construction, which is now one of the best performing economic sectors in the UK.



Chairman & Chief Executive

Largely as a result of the work of CEW, the industry is engaging with best practice and reaping the benefits in terms of output, growth and value.

What is clear in every page of this report is that best practice, as championed by CEW and our stakeholders, is building a better Welsh environment. Adherence to principles such as collaborative procurement and team working is helping Welsh construction to save money and maximise value. Every £1 we spend in construction doubles in value, providing enormous benefits for local communities and the country as a whole – so long as we continue to deliver projects in the right way.

The evidence backing our case is drawn from our successful Exemplar programme and showcased each year in our CEW Awards. This evidence is used daily in dialogue with Government, private developers, planners, policymakers and the supply chain. The team also works closely with our industry colleagues at ICE, ACE, CITB and CECA, to name only a few. Through our continuous programme of events, our outreach is now comparable to that of many membership organisations. We also have a proactive relationship with the UK Government's construction advisor and links to wider industry bodies, such as the UK Contractors Group – which is now supporting the CEW Green Compass initiative.

Educating, influencing and cajoling everyone in the Welsh built environment supply chain to embrace the principles of Constructing Excellence never ends. It is why in 2016 CEW will continue to challenge procurement processes, push for low carbon building design, and demonstrate that waste management has to be an integral element of planning and site management. As construction in Wales continues to grow and thrive, so our best practice message needs to be louder and more coherent than ever before.

Richard Wilson OBE
Milica Kitson OBE

Next year

Looking ahead to 2016, CEW's main objective is to obtain more evidence supporting the case for best practice.

Without hard data, our scope for influencing the creation of a sustainable construction industry capable of galvanising the Welsh economy will be severely limited.

We need substantiated data proving that best practice based on the principles of Rethinking Construction can double the value of investment and significantly improve building performance. This is essential to silence the critics who choose to ignore whole

life cost models in favour of short-term thinking and lowest price.

Through a rigorous process of measurement, benchmarking and assessment, our Exemplar projects are already providing the facts and figures we need to demonstrate that best practice also means best value. By encouraging all public sector schemes to adopt this model, or a similar methodology, we can gather the data we need to make an

unanswerable case for a best practice approach. We will work to convince clients and contractors that systematic measurement should be a core element of project management.

Over the next 12 months CEW will strive to prove our conviction that best practice in construction projects is the only way to add real value for the built environment, local communities and the Welsh economy as a whole.

Value through collaboration

Government, councils and private developers never build anything on a whim. Things are built for a purpose. The construction process is an enabler for economic and societal development.

When done right it boosts educational performance, enhances healthcare and creates great places to live and work – but only when the process is focused on value.

Value is not the same as price. True value in construction means getting more out of the project than a physical structure with a price tag attached. It is about delivering a building designed

But in a climate when every pound has to be justified, how is this value to be realised? It can only happen when a project team unites to ensure the design, planning and procurement processes are focused on the whole life of the building, the interests of the environment and benefits for the surrounding community.



with whole life costs in mind. It is about planning for low maintenance over the life of the building. It is about sustainable design that minimises energy use, running costs and carbon emissions. It is about designing an environment that maximises the comfort and productivity of the occupants.

Justifying investment

And it doesn't stop there. Value is also about the construction phase itself – minimising environmental impact, reducing and reusing waste, and investing in the local community.

The £500 million investment being delivered through the Exemplar projects is effectively contributing £1 billion to the Welsh economy

The built 20% of the economy enables the remaining 80% to perform.



CEW has been championing the concept of value for many years, but now it has become a rallying cry.

Models of best practice

Our Exemplar programme is bringing to light the often 'invisible' value that flows from best practice – we estimate that the £500 million investment being delivered through the Exemplar projects is effectively contributing £1 billion to the Welsh economy. **Yet too many buying decisions remain rooted in price, not long-term value.**

For years we have laid out the key elements of best practice, based on the principles of collaborative working and delivery through integrated teams and focused on outcomes.

Making the case

This approach is particularly crucial in high-profile public projects where the interests of the end users are paramount. Schools and colleges must be designed with an eye to the welfare of students and teachers and improved

educational outcomes. Hospitals must provide environments conducive to efficient operation and patient recovery. And all such projects must consider the facility's whole life costs to reduce the long-term impact on the public purse.

But words are easy. What is needed is hard evidence of the true value of a construction project – and that is where our Exemplar programme comes into its own.

Exemplar projects deliver economic, social and environmental benefits, measured against agreed benchmarks and targets. Comprehensive data is gathered on each of these three aspects. How many jobs, apprenticeships and training opportunities were created? What proportion of the budget was spent locally? How much waste was diverted from landfill? And much, much more.

We estimate that the shortlisted schemes in our 2015 Awards had a total value of £230 million and benefited around 195,000 people.

The key criteria for an Exemplar project are economic, social and environmental benefits, measured against agreed benchmarks and targets

Galvanising the economy

Everything that is built has an impact that extends far beyond bricks and mortar. **The built 20% of the economy enables the remaining 80% to perform. And every pound spent must be made to work to the benefit of economy, environment and society.**

The construction industry has the potential to galvanise the Welsh economy and improve the built environment for future generations. But only if we do it right.

Education is at the heart of creating a successful start in life for a child. It is the foundation upon which they can explore ideas, build a career and play a fulfilling role in their community.



21st Century Schools



Education is therefore intrinsic to a successful Welsh economy. That's why the Government has announced plans to build and refurbish 150 schools across Wales as part of its £1.4 billion 21st Century Schools programme. **The aim is to create the best possible learning environment for our children as well as valuable assets for our local communities.**

Unique opportunity

With the first phase running until 2018, the scheme is a massive undertaking that complements educational initiatives such as the Central South Wales Challenge. It is a unique opportunity for the construction and design community to work in partnership with local authorities, education professionals and parents to make radical improvements, not just to school facilities but to the learning experience of children.

The Government has announced plans to build and refurbish 150 schools across Wales as part of its £1.4 billion 21st Century Schools programme

However, impressive as the cash injection looks on paper, it will come to nothing if it is not spent effectively. That is why CEW has been asked by the Government to work with architects, builders, teaching staff and educational advisors, promoting best practice and collaborative working, and maximising value for money from the capital investment.

But what, exactly, do we mean by value for money? It's certainly not about delivering the cheapest possible buildings. **CEW has identified six guiding principles to clarify what is expected from an education-related project:**

- Improved educational outcomes
- Costing based on the whole life of the building
- Delivery within agreed budget and timescales
- High specification ensuring building is fit for purpose
- Sustainable design and construction processes
- Community benefits.

Comprehensive review

Cost and design data has already been gathered from 35 pilot projects (from a sample of 52), producing the following preliminary findings:

- Construction costs vary between projects, largely due to variation in site conditions such as the abnormal ground conditions
- Above ground construction costs average £1,200 per square metre for both primary and secondary schools and are reasonably consistent. The data suggests, however, that savings can be made
- Gross floor area per pupil ranges from 5 to 7 square metres in primary schools but 7 to 13 square metres in secondary schools, suggesting greater consistency can be achieved in the design of larger schools

- The cost of external works varies significantly between projects and needs to be investigated. Clearer standards and guidelines may be required. The same applies to fixed furniture and equipment costs per pupil
- ICT costs per pupil are highly inconsistent, often reflecting the priority placed by individual LEAs on ICT support for the curriculum. Again, this needs to be examined with a view to establishing the most appropriate level of provision.

Data from the remaining 17 pilot projects and future schemes will be collected in a later report. We will use the findings to determine how the six guiding principles can be applied to ensure our children and their teachers gain as much as possible from the 21st Century Schools programme.





Waste

The past year has seen the work of CEW's waste team grow in importance as both industry and Government recognise the need to address the whole life cost of developing the built environment.

Pioneering initiative

CEW's pioneering waste handling initiative, the Green Compass Scheme, secured national recognition in April when the UK Contractors Group (formerly the Major Contractors Group) declared its support for the PAS 402:2013 accreditation that underpins the scheme. We expect that wider

CEW can verify savings of more than £17 million – a return of more than £4.80 per £1 of investment

adoption of this standard in England will have a knock-on effect for the waste management sector across the UK.

Our campaign to educate and inform via the Enabling Zero Waste (EZW) initiative has included seven events and webinars. The first EZW project at **Millbank Primary School in Cardiff** was completed in January 2015 and the final project report is expected to show a potential 12% reduction in materials usage. A second project at **Castleton Care Home, Newport**, has reported a reduction in waste of approximately 6,100 tonnes. Early data from **Glynn Vivian Art Gallery in Swansea** and the **Ice Arena Wales** contracts indicate further success in diverting waste from landfill. In the coming year the team will work with a further four construction and demolition projects.

The Surplus Centre, now based in Swansea, is showing results with buy in from contractors working throughout the area. CEW will seek to work with **City and County of Swansea, Swansea University Estates, Coastal Housing** and **NHS Shared Services Partnership** on the use of surplus materials. We are also about to conclude a formal partnership with **ICI's Community RePaint** initiative.

Reactive interventions

We intend to advance the development of **Trade Waste Bring Sites (TWBS)** at builders' merchants and are close to establishing a pilot scheme in the Cardiff area, in partnership with a major European organisation.

Overall, diversion and recycling rates continue to improve and CEW's programme of reactive interventions are helping to increase the use of secondary and recycled aggregates. We have helped ensure that:

- **14,000 tonnes of recycled material have replaced virgin material**
- **Around £240,000 in landfill costs have been saved**
- **Since 2008 our waste initiatives have collectively delivered savings of more than £17 million**
- **The savings represent a return of more than £4.8 per £1 of investment.**

We will continue to provide information and guidance for small builders and the whole supply chain through workshops, seminars and marketing activities. We also plan to develop a smartphone app for small builders to assist with management of materials and legislative compliance.

Low carbon



Creating a low carbon economy for Wales remains an important long-term aim for the Welsh Government.

The Low Zero Carbon (LZC) team works within CEW to advocate low carbon building methods, research new technologies, and educate clients, architects, planners and builders about what can be achieved. Our work addresses the retrofit agenda as well as the design and construction of new buildings to help secure a low carbon Wales.

Housing sustainability

Currently the LZC team is working with Government and small and medium sized Welsh builders to determine the best possible housing policy for Wales. We have been supporting UK and Welsh Government initiatives aimed at improving housing sustainability – researching the potential of Green Mortgages, for example, and demonstrating the link between mortgage lending and energy efficiency. **We are gathering evidence to show how high EPC ratings can significantly boost the market value of properties.**

At the same time we are working to build a strong case for the construction

of new low cost, low carbon dwellings. **The LivEco sustainable housing project at Great House Farm, St Fagans, which won our sustainability award in 2014, is a clear demonstration of what is possible.**

Living off-grid

The LZC team has also been monitoring Maes Yr Onn in Caerphilly, the country's first off-grid, truly self-sufficient farmhouse.

By observing the planning and construction process, gathering the occupants' experiences of living off-grid, analysing the performance of renewable and off-grid technologies, and monitoring energy and water use, we hope to learn lessons that will inform the future design, planning and building of new homes. Ultimately we aim to demonstrate that Wales can deliver a practical low carbon housing solution.

We have continued to review retrofit work in Wales, seeking to improve the existing housing stock and make homes more sustainable. One priority is to improve the energy performance of

existing homes. We are also partnering with the Zero Carbon Hub in England to address the issue of overheating in homes as summer temperatures rise.

We are working to build a strong case for the construction of new low cost, low carbon dwellings

New ways to engage

All of this work is underpinned by events designed to engage all parts of the construction sector, including workshops facilitated by the Wales Low/Zero Carbon Hub (WLZCH). These sessions encourage collaborative design, and are helping the industry to ready itself for new EU legislation for zero energy buildings. The team is also researching new ways to disseminate information, potentially via a smartphone app.



Best practice workstream

CEW's best practice programmes are the bedrock for everything we do, driving continuous improvement and greater value across the whole of the Welsh built environment.

Our activities are designed to gather data about what works best in relation to the waste management, environmental and community aspects of construction projects.

At the heart of the work is our unique Exemplar programme, representing the best of the best. Each Exemplar comprises three case studies covering the pre-construction, construction and post-occupation phases of a scheme. Exemplars take a holistic view of construction, maximising community benefits and capturing effective approaches to sustainability, including waste management, energy efficiency and carbon emissions.

Doubling investment value

We currently have 28 projects representing £500 million of investment across sectors ranging from highways to hospitals, schools and homes. Exemplar projects can double the value of investment, so that for every £1 spent almost £2 is invested in the Welsh economy. This means that £4.3 billion spent on construction projects per annum would be worth £8.6 billion to Wales.

Over the next 12 months we plan to establish additional Exemplar projects, run more events and continue to engage with decision-makers. Our aim is that in time, every public sector project will achieve the rigour of an Exemplar.

We expect our work in 2016 to provide further support for our core messages. For example, our research into best practice within schools tells us that an investment of £1.4 billion into 21st Century Schools projects has the potential to achieve:

- **112,000 pupil interactions**
- **448,000 hours of 'in-kind' labour contributions**
- **2,240 apprenticeships**
- **89,600 new entrant opportunities.**

New opportunities

The year ahead will see many opportunities for us to influence building practice, such as our links to the development of Wylfa nuclear power station in north Wales, the plans for the Swansea Bay Tidal Lagoon, and plans for a new campus for University of Wales Trinity St David in south west Wales, as well as the Infrastructure Report recently developed by the South East Club.

We will continue to share the learning through our events, workshops, newsletters and the activities of the Best Practice Clubs, as well as G4C Wales – the only cross-sector body for young Welsh construction professionals. G4C is important because its members represent the future of the sector and will bring passion and fresh thinking to the value debate.



Rationale for CEW

The rationale for advocating best practice based on the principles of Rethinking Construction remains as true now as it was in 2002 when CEW first began its work. Collaborative procurement, integrated team working and a holistic approach to the planning, design and management of the construction process is the only way that we as an industry can be sure of delivering projects on time, within budget and to agreed quality levels. It is the only way to meet Government targets on low carbon, waste and community benefits.

The future of the Welsh economy and the wellbeing of future generations depends on it.

Exemplar projects can double the value of investment, so that every £1 spent is worth almost £2 to the Welsh economy

Exemplar projects

Wrexham Bypass
 Merthyr Tydfil Town Hall Refurbishment
 A477 St Clears to Red Roses
 Morriston Secondary School, Swansea
 Ffordd Amazon
 Ty Ffynnon, Flintshire
 A465 Heads of the Valley (Phase 3)
 A465 Heads of the Valley (Phase 2)
 Penarth Learning Community
 Newtown Bypass
 Arbed Phase 2
 Raglan Primary School
 Llandough Adult Mental Health Unit (LAMHU)
 Nant Talwg Primary School
 Ysgol Dewi Sant
 Oakfield School (VOG)
 Nantgarw Training Centre
 Cardiff Eastern PDR
 Bontnewydd Bypass
 Gowerton School
 Aberdare Campus
 Burry Port Primary School
 Trimsaran Primary School
 Newport High School
 Gateway to the Valleys (G2V):
 Coleg Cymunedol y Dderwen
 Llanwern High School
 Castle Lane, Swansea
 Llanbedr Community Hall

Governance & Finance

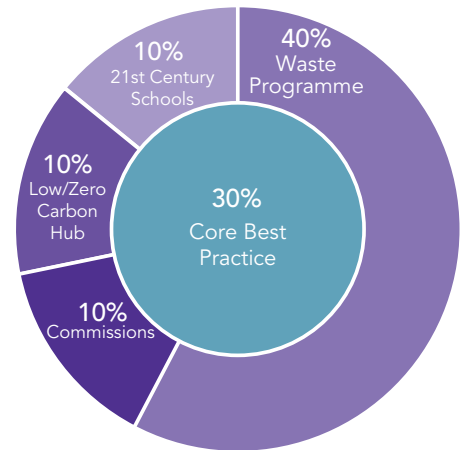
Constructing Excellence in Wales is grant funded by the Welsh Government. Its role, actions and outputs are monitored and reviewed by Carl Sargeant AM, Minister for Natural Resources. CEW is a limited company with a Board of Directors chaired by Richard Wilson OBE, Deputy Director, Finance and Corporate Services Directorate. It is led by its Chief Executive, Milica Kitson OBE, and an operational team of directors: Paul Jennings, Ed Evans and Emma Thomas.

CEW engages with and has the support of a range of stakeholders from across the Welsh built environment. These

include clients in the public and private sectors as well as industry representative bodies and individual companies from the industry supply chain.

The grant breaks down as follows:

- 30% Core Best Practice –** Demonstrations, Exemplar Best Practice, Clubs and industry Task Groups
- 40% Waste Programme**
- 10% 21st Century Schools**
- 10% Low/Zero Carbon Hub**
- 10% Commissions**



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