



Vision for Wales **2025**

Generation for Change in
Construction & Infrastructure

Foreword

Generation for Change (G4C) sets out its vision and aspirations for the future of Wales and its construction industry.

This document was co-ordinated and written by G4C's twelve passionate committee members following consultation with its 430+ strong membership of cross-institution and cross-sector professionals, and consideration of current National, European and International developments. It is an ambitious but achievable blueprint for the future for our industry in Wales.

This document has been drafted with full consideration to BREXIT and the current political agenda. It is our view that the suggestions within this document should transcend these agendas and be prioritised at the highest level to secure a prosperous and sustainable future for Wales.

Why?

G4C Wales, a sub-group of Constructing Excellence in Wales, provides a voice for our generation of young professionals within the Welsh construction industry. We have held various meetings and events and have listened to our peers and colleagues.

One message was consistent and clear:

“We do not have a say in our own future. We are concerned that if this is not addressed properly, we will be yet another disengaged generation who are left to mend the problems created by previous generations of decision makers.”

We therefore took it upon ourselves to create this ‘Vision for Wales 2025’. By creating this document, we are providing our thoughts and guidance to the decision makers of today, so that we can hope to achieve our goal of helping to shape our future.

How?

In order to give this vision clarity, we have focused on **4 key topics** that were identified through our member workshops as the major areas of focus for the future of Wales:

1. **Skills & Trades**
2. **Regeneration**
3. **Energy**
4. **Infrastructure**

Within each of these key areas, we have provided context and set out our thoughts on the current approach. Most importantly, we have stated our aims for Wales within these key topics and offered ways in which we can assist with bringing this change forward.

We have all added to the creation of this document and we look forward to assisting with its implementation as future leaders of industry.

Yours Hopefully

Generation for Change (G4CWales)

Skills and Trades

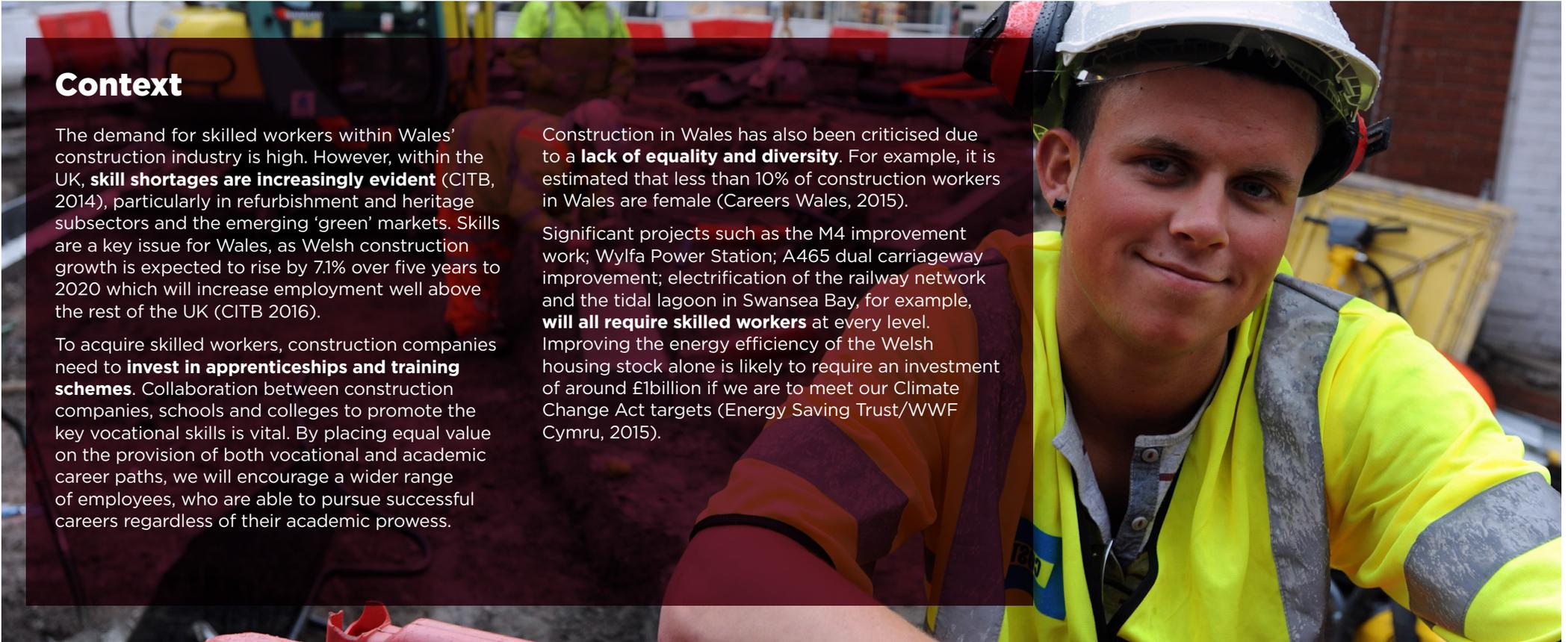
Context

The demand for skilled workers within Wales' construction industry is high. However, within the UK, **skill shortages are increasingly evident** (CITB, 2014), particularly in refurbishment and heritage subsectors and the emerging 'green' markets. Skills are a key issue for Wales, as Welsh construction growth is expected to rise by 7.1% over five years to 2020 which will increase employment well above the rest of the UK (CITB 2016).

To acquire skilled workers, construction companies need to **invest in apprenticeships and training schemes**. Collaboration between construction companies, schools and colleges to promote the key vocational skills is vital. By placing equal value on the provision of both vocational and academic career paths, we will encourage a wider range of employees, who are able to pursue successful careers regardless of their academic prowess.

Construction in Wales has also been criticised due to a **lack of equality and diversity**. For example, it is estimated that less than 10% of construction workers in Wales are female (Careers Wales, 2015).

Significant projects such as the M4 improvement work; Wylfa Power Station; A465 dual carriageway improvement; electrification of the railway network and the tidal lagoon in Swansea Bay, for example, **will all require skilled workers** at every level. Improving the energy efficiency of the Welsh housing stock alone is likely to require an investment of around £1billion if we are to meet our Climate Change Act targets (Energy Saving Trust/WWF Cymru, 2015).



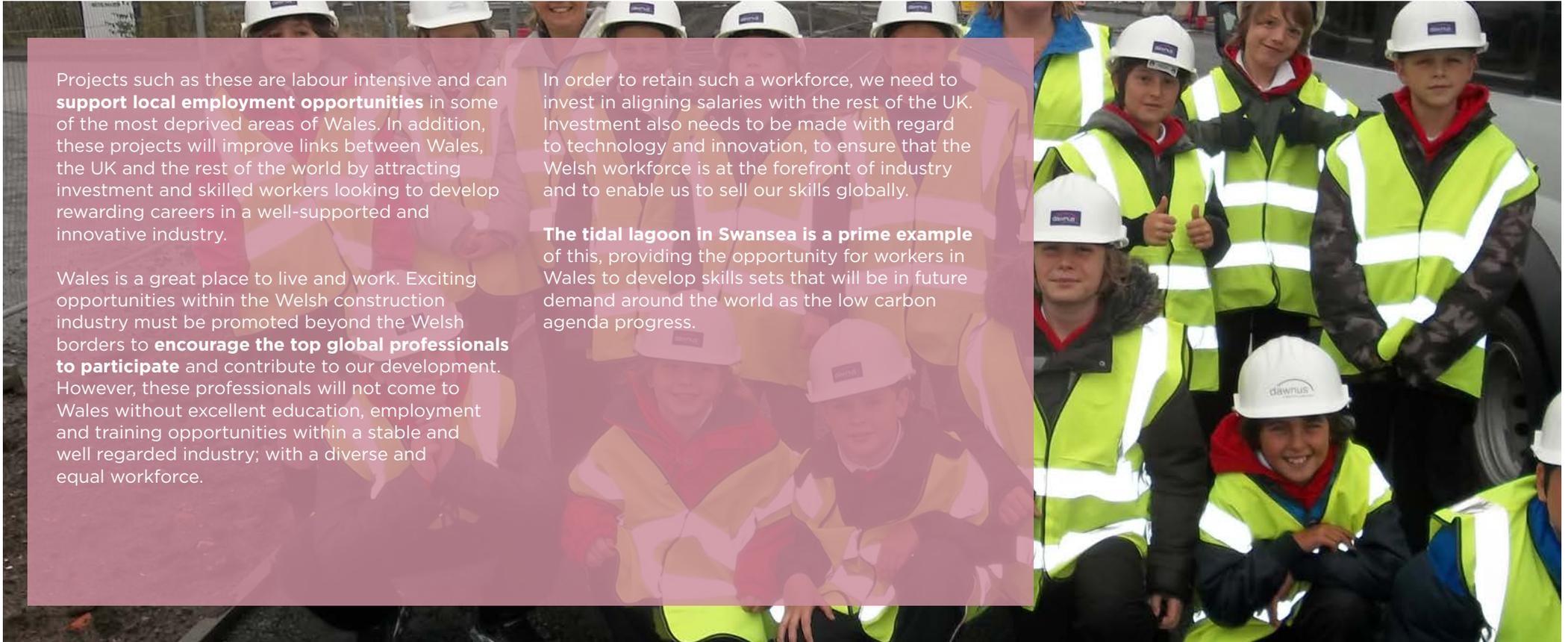
Skills and Trades

Projects such as these are labour intensive and can **support local employment opportunities** in some of the most deprived areas of Wales. In addition, these projects will improve links between Wales, the UK and the rest of the world by attracting investment and skilled workers looking to develop rewarding careers in a well-supported and innovative industry.

Wales is a great place to live and work. Exciting opportunities within the Welsh construction industry must be promoted beyond the Welsh borders to **encourage the top global professionals to participate** and contribute to our development. However, these professionals will not come to Wales without excellent education, employment and training opportunities within a stable and well regarded industry; with a diverse and equal workforce.

In order to retain such a workforce, we need to invest in aligning salaries with the rest of the UK. Investment also needs to be made with regard to technology and innovation, to ensure that the Welsh workforce is at the forefront of industry and to enable us to sell our skills globally.

The tidal lagoon in Swansea is a prime example of this, providing the opportunity for workers in Wales to develop skills sets that will be in future demand around the world as the low carbon agenda progress.



Skills and Trades

Aim

We want **world class professionals** to be attracted and retained within the Welsh Construction sector. To do so, Wales must invest in and improve its existing education/training systems as well as provide a stable industry to retain these newly skilled professionals. The primary objectives for the Welsh construction industry in relation to skills and trades must be:

- The **promotion of equality and diversity** at every level
- **To bridge the skills gap** by working with local community and employment groups to upskill and retrain professionals, targeting long term unemployed and career breakers
- **Intensive collaboration** between the industry and education/training providers to ensure skills demand is being met by supply
- **Build upon successful initiatives** such as the 'Open Doors' scheme to improve our industry's reach beyond those still in education
- **Increase industry security** by formulating a long term development plan attracting sustainable investment and providing effective business support
- To provide a **structured career support** system to practising professionals through valued and accessible training and mentorship.

Wales' relatively young governance model can be of benefit; providing greater freedom to implement a more forward-thinking, innovative and business orientated education and skills agenda that has sustainability at its heart.



Skills and Trades

Bringing Change

Unless the supply and retention of skilled workers improves, the delivery of large scale projects in Wales **will be put at risk**. We feel that to ensure the attraction, education and retention of the best professionals there is a need to:

- **Promote construction in schools;** By promoting the varied and rewarding career paths available in the construction and engineering industry, building transferable skills into curriculums, and providing sound careers advice
- **Improve SME access to apprentices;** Through better financial support, Small to Medium Enterprises (SMEs) are more likely to employ apprentices.

In order to help deliver this, a **cross-sector skills and training forum** that involves training providers, universities and employers should be established to investigate and produce a cohesive and uniform training and skills plan that meets the needs of the industry.

Wales needs to ensure that the long term future and security of its workers are guaranteed through sufficient training, upskilling, and professional opportunities. Doing so can place **Welsh construction as a world leader** in the formation of skilled professionals ready to meet the demand of a thriving sustainable, equal and diverse industry.



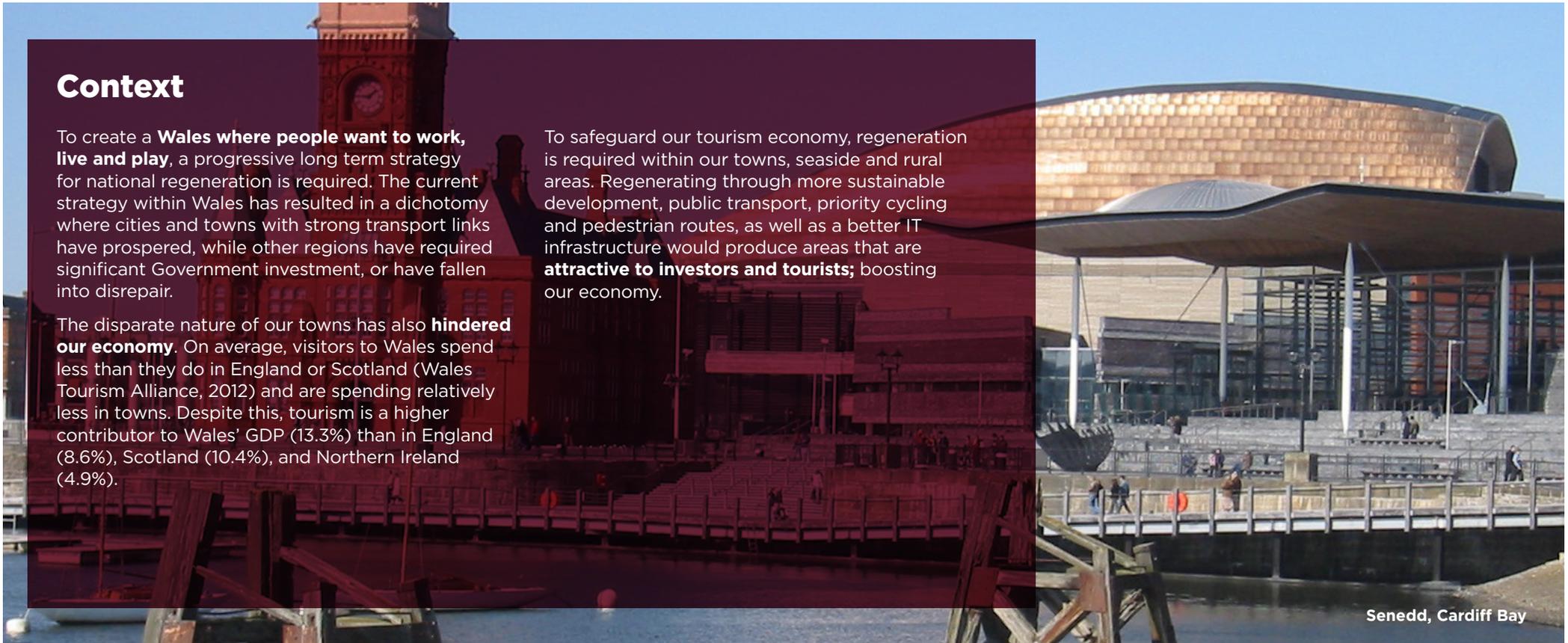
Regeneration

Context

To create a **Wales where people want to work, live and play**, a progressive long term strategy for national regeneration is required. The current strategy within Wales has resulted in a dichotomy where cities and towns with strong transport links have prospered, while other regions have required significant Government investment, or have fallen into disrepair.

The disparate nature of our towns has also **hindered our economy**. On average, visitors to Wales spend less than they do in England or Scotland (Wales Tourism Alliance, 2012) and are spending relatively less in towns. Despite this, tourism is a higher contributor to Wales' GDP (13.3%) than in England (8.6%), Scotland (10.4%), and Northern Ireland (4.9%).

To safeguard our tourism economy, regeneration is required within our towns, seaside and rural areas. Regenerating through more sustainable development, public transport, priority cycling and pedestrian routes, as well as a better IT infrastructure would produce areas that are **attractive to investors and tourists**; boosting our economy.



Senedd, Cardiff Bay

Regeneration

To date there have been a number of successful regeneration projects around Wales, a key example being the regeneration of Cardiff Bay. Now, along with opportunities for large investments such as the Swansea Bay Tidal Lagoon, Wales has an opportunity to further enhance its towns. However much **more investment is needed outside of the few select areas**, as many towns around Wales have suffered due to the steady decline of the steel, iron and coal industries and due to other factors at play. In order to regenerate these areas, there is a need for greatly improved transport links between these towns. In particular, due to a lack of investment in road and rail infrastructure, access between North and South Wales is severely lacking.

The lack of regeneration has also had a **negative health impact**. NHS Wales have reported that levels of asthma in Wales is amongst the highest in the world, with 4000 Welsh people being admitted to hospital annually.

'Unfit' housing with significant damp problems and insufficient ventilation has been identified as a factor (NHS Wales, 2012). Regeneration of these areas provides an opportunity to improve the housing stock, and in turn improve the health of nation as well as improving property value.

Regeneration of residential areas would not only have a positive health impact, but also **significantly reduce our national energy demand** and carbon emissions in line with the Climate Change Act. With a large majority of solid wall constructed housing throughout Wales, there are significant health, environmental and economic advantages in undertaking retrofit measures.



Central Square Cardiff Wood Street View

Regeneration

Aim

We want Wales to be recognised as a **vibrant sustainable country**, with strategic zones acting as incubators to upskill local communities and create pockets of specialism; ultimately forming a place where people want to live, work and play. The primary objectives for the Welsh construction industry in relation to regeneration must be:

- **Enriching communities** and providing niche opportunities for growing sectors such as ecotourism
- **Formation of a long term strategic development plan** for the creation of cross-country strategic zones
- **Regeneration of local housing** within strategic zones to improve local health, energy consumption, and property value
- **Develop area specific traits** such as tourism, media, production, education and research to form regional centres of excellence
- **Utilise business incubation** centres to provide support to local SMEs as well as facilitate the delivery of in demand training and skills for the industry
- **Financing for business growth** to provide easy access to funding
- **Support Community Action Groups** to self-regenerate local areas.

Investment should happen following an assessment of existing, proposed and possible future infrastructure. Investment decisions should prioritise sustainable infrastructure proposals and recognise the value of innovation and sustainable design that has a focus on economic, cultural, health and tourism advantages.



Regeneration

Bringing Change

In order to achieve such a highly strategic and cross dependant regeneration, we feel that a **dedicated Specialist Advisor for construction and infrastructure is required.** If selected from industry, such a prominent and influential role could ensure the success of the project while also prioritising the educational and health benefits of inclusive Architecture.

To provide further opportunities, local communities should be given access to training on the use of crowdfunding and social media as well as workshops on business planning, loan application, and entrepreneurialism. Regeneration need not be exclusively developed from large strategic plans - many of the most valuable regeneration projects are small scale community driven improvements.

With the support of community action groups, local communities will be able to establish links with schools, colleges and universities to create small scale projects involving local volunteers. Such groups could also engage with local architectural practises, construction professionals, designers and artists in order to achieve more ambitious and impactful regeneration schemes.



Energy

Context

The need to reduce our reliance on non-renewable fuel sources and to reduce the emission of greenhouse gases is supported by a number of high level commitments such as ESOS (Energy Savings Opportunity Scheme) and CRC (formerly known as the 'Carbon Reduction Commitment') .

In the context of a sustainability agenda that continues to build momentum and its abundant natural resources of wind and water, **Wales is ideally placed to become a surplus renewable energy generator.** The construction industry must harness this opportunity through the support of renewable energy projects.

The Swansea Tidal Lagoon project is predicting clean, renewable and reliable energy for more than 155,000 homes and presents further opportunities to create similar projects along the Welsh coastline. If such projects are supported, **energy generation in Wales could match that of Norway's** well established hydro market, which alone is currently producing more energy than the entire country consumes.

Great House Farm, St Fagans

Energy

Anglesey Wind Farm

Outside of the renewables sector, Wales has also seen an increase in alternative energy schemes utilising waste; schemes such as these are expected to increase as routes for waste disposal become economically unviable. The Viridor plant in Cardiff Bay has been predicted to **save more than £500 million in waste management costs** over the next 25 years, while Denbighshire has one of the largest anaerobic digesters in the country.

There are numerous proposals for similar projects across the country, all helping to drive the energy sector towards a more sustainable and home grown energy mix.

Other significant energy projects include:

- **Gas fired peaking plant project at Hirwaun,** which is expected to produce power for 400,000 homes during times of national short term variations in supply;

- **Wylfa Newydd Power Station,** which is expected to create 6,000 construction sector jobs to the North Wales area, along with an estimated £87 million annual GVA to the Welsh economy during its 60 year lifetime.

While reliance on nuclear, gas and waste energy generation schemes are not envisaged as part of the long term energy landscape, we cannot ignore the investment in training and professional skills that such opportunities can provide in the short term.

The knowledge and expertise gained through the execution of such projects **should be retained where possible,** allowing Wales to harness these specialist skills to facilitate Wales' transition to a low carbon nation.



Energy

Aim

We want Wales to become a **surplus energy producing nation**. The primary objectives for the Welsh construction industry in relation to energy must be:

- **Low carbon economy**, with robust zero carbon targets for all new builds
- **Progressive and proportionate carbon targets** for all refurbishment and retrofit projects
- **Tax relief** to maximise investment in energy reduction initiatives
- **Decoupling economic growth and carbon intensity**
- **A more efficient planning, funding and consultation process**, supported through our devolved powers.



Energy

Bringing Change

To become an energy surplus nation, Wales needs to give **support to emerging technologies** and sectors such as wireless energy. Small scale applications are already in the early stages of development and would be capable of providing **reduced infrastructure and ICT costs**. This will improve the feasibility of developing rural strategic zones as part of a cross-country regeneration plan that will further **justify the development and retention of local skills**.

The benefits of providing cleaner, cheaper and new types of energy are clear. Reduced costs and flexibility for businesses means increased profit and opportunities for growth. Profit allows companies to invest in people, develop skills and trades, employ and **retain the best in the business and attract further investment**. Cleaner energy also contributes to a healthier nation, while a shift toward energy efficiency will help to eliminate fuel poverty and support some of our most vulnerable communities.

Along with cleaner energy, there is also a need to reduce how energy is consumed in Wales. By the year 2050, **Wales will still be using approximately 70% of its existing buildings**. Wales' traditional building stock requires higher energy levels to maintain comfort and deter poor environmental conditions. To mitigate this, appropriate targets for refurbishment and retrofit should be established to improve the performance of our existing assets.

The Welsh Government has set a target for Wales to become a low carbon nation by 2025. In order to meet this challenge and to exceed it, **we require further investment in education, expertise and technology**. We support, in principle, the long term move away from nuclear production to more sustainable energy generation. This move, should be coupled with robust carbon efficiency targets for homes and businesses that do not penalise growth in energy consumption, but instead support intensity reduction. Such practical energy awareness programmes should be promoted and supported at every level.



Pen y Cymoedd Wind Farm



Tidal Lagoon

Infrastructure

Context

To improve Wales on a **social, economic and environmental level** and to facilitate sustainable growth as well as wider career and development opportunities, it is essential to attract and/ or create new businesses that sit within the local economy but face outwards.

Wales possesses the key characteristics to achieve this given its relatively low cost economy, capable work force, and proximity to London and other large cities of England. However, the key driver will be the implementation of infrastructure improvements. First-rate road and rail networks would provide enhanced connectivity for communities, businesses and key services and **ensure Wales is sufficiently connected** to the rest of the UK and international markets.

Poor transport links are a key factor **hindering investment in Wales**. The difficulty in travel around Wales, in particular the time taken to travel between North and South Wales has often been cited as a barrier to economic growth. For example, without the Aberystwyth- Carmarthen railway link, all cross country rail travel must pass through Church Stretton. Faster and more dependable transport links will be required to ensure a strong economic and cultural relationship is maintained.

Pen y Cymoedd Wind Farm

A465 Heads of the Valleys Section 3

Infrastructure

While many key projects are underway, to improve Wales' infrastructure, there is a need for **more strategic development** to ensure that each scheme maximises its potential impact to connect our country. Identified below are some of the projects we see as having an incredibly positive impact on Wales' infrastructure:

- **M4 relief road:** Critical for future economic growth in South Wales and the Cardiff City region development tie up with Newport and Bristol
- **A465 improvements (Section 5 and 6):** Vital to connect the West of Wales as well as maintain infrastructure links to the Midlands
- **Rail Electrification to Swansea:** Key to improve access into Wales allowing better investment opportunities, and justify further work to Valley lines
- **North Wales Expressway:** Improvements allowing ease of access between Ireland, Liverpool, Manchester and the North of England into Wales
- **A40 Improvements:** To provide greater access to Pembroke Dock & Milford Haven
- **A470 Mid Wales improvements:** Improve time and safety performance of the A470 thereby providing quicker and safer access to areas of Wales outside of the M4 corridor.

A477 St Clears to Red Roses

Infrastructure

Aim

We want a 'Connected Cymru'. Not a despairing, disparate dichotomy, but a homogenous hive of activity. Therefore, the primary objectives for the Welsh construction industry in relation to infrastructure must be:

- **Greater connectivity** within Wales and encourage cross border integration
- **More efficient transport networks** to reduce city centre congestion
- **Environmentally friendly and sustainable** transport methods
- **Future proof infrastructure** to allow Wales to be 'Open for Business' and attract potential investment
- **Enhanced support services** (hospitals and schools) to supplement economic growth
- **High Speed IT infrastructure** improvements / Wireless Wales
- **'Metro' thinking;** improved transport integration to distribute people, services and end products
- **Airport review,** potentially linking Cardiff and Bristol / terminal 6
- **'Coast to Coast'** water connectivity within Wales.



Infrastructure

Bringing Change

To become a 'Connected Cymru' Wales needs to further **strengthen its infrastructure** in order to improve access to Wales from other nations, as well as improving access from region to region within Wales. We feel that this can be achieved through the following key initiatives:

- **Cardiff Airport:** Cardiff Airport is deemed poorly accessible by many, with limited links to the M4 and poor connectivity with the rest of Wales. In order for the airport to maximise its potential, there is a clear need to review and enhance the connectivity of the airport by providing dedicated transport routes or by providing a national, joint up initiative with other airports in the UK. Perhaps a more radical solution would be to develop a new airport within the Seven Estuary within close proximity to the M4 and providing greater connectivity between England and Wales

- **Super-fast broadband capacity and distribution:** Building a new, fast broadband network across Wales is pivotal to attracting inward investment; as currently broadband capacity and distribution is inadequate. Initiatives such as Superfast Cymru will help to transform the broadband landscape in the coming years but Wales needs to be pro-active in its approach and provide flexibility for the future given that technology is constantly changing

- **Metro thinking:** Initial work has commenced to provide a multi modal transport network but there are further opportunities to include more innovative forms of transport such as sea planes (coast to coast) and overhead cable cars amongst others. The key to this is improving the standard and reliability of public transport to provide an integrated metro solution that joins up all modes of transport, therefore reducing the necessity for private car transportation in everyday use.



Epilogue

G4C Wales is an ambitious and aspirational group of individuals focussed on helping Wales move forward through a world leading construction industry that continues to punch well above its weight. Our industry leaders are already engaged in some of the most **exciting energy producing projects** in the world, with Swansea, Cardiff and other tidal lagoon locations along our rich coast line being discussed. These lagoons along with other renewable sectors can be a driver for upskilling our construction sector to deliver this service on a global scale.

We now have devolved powers that allow Wales to make big decisions. If these decisions can be streamlined to deliver realistic and achievable targets, we should be in a position to benefit in the long term. If focussed correctly, this model can be used to help the public and private sectors forge relationships for the **delivery of a better Wales.** Public and Private sector regeneration projects should be considered normal practice, with public sector procurement skills sufficient to deal with the complexities that this involves.

Projects such as Central Square Cardiff should be used as a case study for other major city centre schemes within Wales. The appointment of a **Welsh Special Advisor for Construction, Engineering and the Built Environment** would be an excellent step forward to provide this joined up approach.

Our infrastructure is in desperate need of being improved. Although the electrification of the rail lines is underway, this can only be considered a small step to becoming a fully connected country. The **M4 improvements scheme needs to be accelerated.** In addition, the Metro system and a realistic plan for our airport should be prioritised as major projects for immediate delivery. We appreciate that the Wales Infrastructure Plan addresses a number of these issues, however it is our firm belief that some of these major projects need to be **removed from the political arena,** to ensure delivery for the betterment of Wales' future.

Considering that the **Welsh construction industry contributes approximately 10% to the Welsh economy,** educating our future generations to support this key economic activity is vital. Collaboration and engagement between schools, colleges, universities, the government and employers needs to be increased. This could be achieved through greater links between these parties with a view to developing apprenticeships and demonstrating what can be achieved from a life in construction. We believe a centralised **Welsh Construction Training Academy** would be an excellent route forward to becoming global market leaders in the construction sector.

G4C believes that with the correct focus and action, Wales can become an exemplar for other countries in becoming a **surplus renewable energy generator.** This goal will help us deliver ambitious and **future proofed regeneration projects** that will provide the infrastructure for future generations to continue to develop Wales into an exciting, vibrant and affluent place to live and work.

Contact information

G4C Wales

2nd Floor, Longcross Court / 47 Newport Road / Cardiff CF24 0AD

T: 029 20 493322 F: 029 20 493233

E: G4CWales@cewales.org.uk

<http://www.cewales.org.uk/get-involved/g4cwales/>



Andrew Gibson - Chair
Partner
Cushman & Wakefield



Daryl Fisher
Director
GreenBuild Consult



James Gundy
Director and Office Lead
AECOM



Jason Howells
In House Lawyer
IQE



Sara Ifan
Architect
Powell Dobson Architects



Ross Irvine
Planner
Arcadis Consulting (UK) Limited



Ellen Jones
Programme Manager
Constructing Excellence in Wales



Ffion Lanchbury
Associate
Rio Architects



Paul Lavelle
Associate Director
Faithful + Gould



Daniel Rossiter
Senior BIM communicator
BRE Wales



Jon Williams
Business Development Director
WRW



Ceri Gullett
Environmental Advisor
Babcock International Group