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Common Weal Policy

# GOOD HOUSES FOR ALL: HOW SCOTLAND CAN BUILD UNLIMITED HOMES - WITHOUT SUBSIDY

# COMMON WEAL



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Or contact us at:

[hello@commonweal.scot](mailto:hello@commonweal.scot)

## AUTHOR

Craig Dalzell is Head of Policy at Common Weal

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## KEY POINTS

- Scotland's housing market should offer people a quality public rental option, whether for young professionals not ready to enter the mortgage market, lower income renters who have few good rental options or families at any point on the income scale who simply don't want their lives dictated by mortgages. Public policy should also seek to constrain house price rises but also drive up the highest possible thermal performance for new build houses.
- Scotland also needs forms of stimulus after the Covid-19 lockdown and public rental house building linked to an industrial strategy to create many more domestic supply chains can create it.
- There is a financing model where this can be achieved at unlimited scale without public subsidy, involving three steps:
  - Use 'Land Value Capture': At the moment the public buys land and pays for it as if planning permission had already been granted – but planning permission is a value added by the public sector and the public sector can capture that value rather than give it away by buying land only at its current use value and not its later value with planning permission.

- Then borrow from the Scottish National Investment Bank over mortgage-style periods of time (30 years) and spread the cost of the borrowing over that period so that rents are low.
  - Finally, build in a proper maintenance budget so these remain high-quality houses in perpetuity. It is also possible to sell off a limited number of plots (for self build) and a small proportion of the houses. This can give the public developers some additional budget to include extra public infrastructure in new developments.
- To achieve this the Scottish National Investment Bank should be given immediate dispensation to operate as a proper bank and local authorities should open 'lists' for families who want to live in one of these houses. Supply can then be allowed to meet demand.
- In the current market a three-bedroom family home would incur a monthly cost in rent, heating and maintenance of about £1,400. A house built using the above methodology would have a monthly rent, maintenance and heating bill of only £820.

## PREFACE

Scotland's housing sector is deeply unbalanced. The owner-occupier sector has inflated prices far out of reach of many whilst delivering cold, draughty and poorly built homes. To those who can still afford them, the private rental sector has similarly inflated – trapping many in a situation where they cannot simultaneously pay rent and save for the deposit to buy a house and the social rented sector has been deeply stigmatised and run down over decades to the point where it no longer fits the purpose that it was designed for – to provide an affordable and high quality home to everyone who needs one.

The economic crisis caused by the 2020 coronavirus pandemic coupled with the looming crisis of the climate emergency will mandate the mass construction of very high quality homes complying with zero-carbon and near-passive heating standards.

This paper lays out a plan by which Scottish Local Authorities could build an unlimited number of these high quality houses, subsidy free, with secure and sustainable financing and at a much lower cost than can be delivered at present.

## INTRODUCTION

One of the most severe policy failures in Scotland today is the presence of a deeply unbalanced housing and construction sector which has created a housing landscape in which far too few have the chance to live affordably in a house that is fit for purpose in the 21st century. The need to do this was urgent before the coronavirus pandemic of 2020 just as it was important before 2019 and Scotland's declaration of a "climate emergency". The demands of the climate emergency have created the need to rapidly increase the quality of homes so that they meet the zero-carbon, net zero-energy standards that will be necessary for a Green New Deal to be successful – with the bonus of eliminating fuel poverty in Scotland. The 2020 pandemic has resulted in an economic lockdown across all sectors – with the construction industry being

particularly affected<sup>1,2</sup> – and there will be a need to rebuild the economy coming back out of the crisis.

However the time pressures of the climate emergency will dictate the shape of the post-lockdown recovery. There is simply not enough time to spend a decade "getting back to normal" only to then think about adapting to a Green New Deal. Further, the pressure of existing failures in housing must be addressed regardless of the other two looming crises so "getting back to normal" merely serves to perpetuate and further inflict those injustices on the people of Scotland. A national housing strategy must therefore address all three problems simultaneously.

## THE PRESENT STATE OF HOUSING IN SCOTLAND

More than just ensuring that everyone has a roof over their head, a properly running housing policy is the foundation which sustains a healthy society. The dominant policy of the past several decades has been one which has pushed personal ownership of housing, of "climbing the housing ladder" and of sinking ever increasing amounts of capital into buildings with the unquestioned assumption that future prices will increase. This has led to segregated and divided communities, unaffordable housing, rising rents and an unsustainable transfer of wealth from those who cannot afford to own property to those who can or already do (often in the form of a portfolio of many houses). The generational divide is growing<sup>3</sup> with a 30 year old in 2017 being only half as likely to own a home than someone who was 30 years old in 1990.

Consideration must also be given to the changing living patterns of the population and how an increase in housing supply – and the consequent effect on house prices – may affect those patterns. The number of houses being built in Scotland each year has consistently outstripped population growth<sup>4</sup> but the supply of available houses has remained tight. This is due, in part, to changing lifestyles leading a reduction<sup>5</sup> in the number of people living in each

house. Chiefly, the Scottish population is living longer and older people are more likely to live in smaller households. Families are more readily able to divorce or separate than was the case in previous decades which has contributed to an increasing atomisation of living conditions.

In recent years the political debate around the topic of meeting housing demand has too often been limited to setting a house building target and then beginning a political stramash over the number set and whether or not the parties have met it or would meet or exceed it if they were in power. This is a low level approach to the problem especially if targets have been set arbitrarily or merely at a level higher than another party's own target.

The targets may be set by looking at studies such as council house waiting lists and this may be a valid and worthy first step but it must also be recognised that this metric will almost certainly underestimate the true demand for affordable housing in an area. There will almost certainly be a tranche of the population in a given area who may desire an affordable house but when faced with council house waiting lists on the order of several years – a 2014 report found 13,000 people in Scotland had waited more than a decade for a council house<sup>6</sup> – there may be many who simply do not apply for a house at all though they maybe would if there was a more reasonable prospect of them being allocated one.

“Right to Buy” had the effect of transferring a huge volume of public housing to the private sector, often at well below market or even replacement rate prices, and the time since has shown that many people who bought those homes no longer own them. Around 40%<sup>7</sup> of houses sold under “Right to Buy” are now privately rented. The collapse of the public rental sector since the 1980s has forced those who cannot buy to rent from an insecure “market” which has every incentive to squeeze the maximum it can out of tenants. More recently, the rise of “short term lets” like Airbnb and the “student accommodation” sector have seen the conversion of thousands of homes in key city centres<sup>8</sup> which has further increased housing pressure in these already high demand areas, like the centre of Edinburgh.

Arbitrary national targets may be politically useful but do not help deal with the nuances of the housing problem as it can result in councils being pressured to build houses in areas simply where it is cheap to do so regardless of demand. A national planning board could commission and maintain a “heatmap” showing not just house prices and a metric of current supply and demand but also the prospects of future supply and demand in particular areas. There may be no sense in promoting large amounts of housebuilding in areas where there is not the potential for the expansion of jobs and other services in those areas. On the other hand, an area where there is the potential for investment in both houses and economy boosting measures could be both prioritised as part of an integrated housing and economic strategy.

If such a strategy can be developed then a more nuanced approach to housebuilding can be adopted whereby targets are not set arbitrarily or by political whim but instead are set by a “demand led” approach. Local Authorities should be able to build as many houses as required to meet the demand in an area. By guaranteeing a security of supply and by legislating that long-term patient funding be used to construct the highest quality of housing, this strategy will act to stabilise the private market against continued price speculation and would act to raise the quality of housing overall as the private market will necessarily have to compete against the option of a public-owned rented house that is cheaper and higher quality than the private sector overwhelmingly builds at the moment.

## THREE PILLARS OF SUCCESSFUL HOUSING

The national housing strategy that this paper should form the foundation of should be composed of three main pillars. First, the current crisis will demand an economic stimulus programme to avoid long-term stagnation post-pandemic. Second, the social injustice caused by the current housing landscape must be corrected. Finally, a national planning framework should be based around a strategic foundational

economics plan designed to ensure that the Scottish economy is made more robust in order to better withstand future crises such as the climate emergency.

## Housebuilding Stimulus

The 2020 pandemic has effectively shut down the construction industry. Whilst policies deployed by the UK and Scottish Governments may help to prevent workers from being laid off or prevent companies from closing altogether it is not yet clear just how deep the economic impact will be or how long it will last. The lack of domestic construction materials in Scotland have been highlighted by the collapse of global supply chains due to the pandemic and it may be that these supply chains remain disrupted for a sustained period of time even after individual countries begin to re-emerge. As explored later in this paper, the current housebuilding construction supply chain is wholly inadequate for a Green New Deal infrastructure and needs to be transformed from materials up to training. Unless there is demand for the kinds of high-quality housing already in place, there will be no demand from the private sector to invest in this kind of transformation. An economic stimulus of social housebuilding will generate that demand and create the transformation required. With the correct regulations in place, the private sector will then be forced to catch up or admit that they are not capable of delivering the kinds of houses that Scotland needs.

At present, the Scottish political landscape is obsessed with playing a numbers game with social housing. For years now, the administration in power has decried the record of the previous administration with regards to house building numbers while self-congratulating the (barely higher) number that it has built. Meanwhile, that number is increased by the smallest possible margin and offered as a manifesto pledge which shan't be met but will still be held up against the new previous administration's record.

This can't go on. Politics shouldn't be about "How many houses did we build?" but about "Did we build enough?". If the answer is no, the number is more-or-less irrelevant. Social housing should be built according to demand. To enable this, this report will outline the steps to be taken.

First, the Scottish National Investment Bank must be empowered to be able to lend to local authorities and housing associations for the purpose of building houses along the model detailed later in this report. Provision could also be made to allow this kind of strategic lending to co-operatives and other local groups to enable them to build zero-carbon, passive houses too. As detailed below, the SNIB currently does not have the powers to capture sources of capital like pension funds and will not be able to leverage its capital (i.e. loan out more than it is given by the Scottish Government) so will not be able to loan at the scale required to meet demand.

Second, Scotland needs significant land reform and Local Authorities should be given the ability to purchase land at Existing Use Value. This will significantly bring down the costs of new developments both on new greenfield sites but also on reclaimed brownfield sites.

Third, the communities of houses built by this model may not consist entirely of social housing as this would risk continuing some of the segregated communities experienced by badly implemented plans in the past (it will also allow flexibility in local government financing as it would allow them to bring in some upfront cash along with the longer term rents coming from the social houses). Some plots may be sold to owner-occupiers or set aside for self-built houses (so long as the same zero-carbon, net-zero energy requirements are maintained). There will also be the prospect of using some plots in a development for shops, services and community spaces – a future paper will outline what a "Common Weal Community" might look like.

Finally, there must be discussion about the long term maintenance of the houses over their lifespan. As shown in this report, the maintenance of a passive house is substantially less than a conventionally built house over the lifespan of the property (and they are cheaper to demolish and recover the resources from them at the end of their life which is a critical component of the Circular Economy<sup>9</sup>). The costs outlined in the case studies below make full provision for the maintenance costs of the houses involved in the study which allows for a more complete comparison of overall cost comparisons. The

Local Authorities will hold the responsibility of maintaining the social houses built under this plan which will allow them to leverage bodies like a National Housing Company and a Scottish National Infrastructure Company to ensure that all repairs are carried out to the exactingly high standard that will allow the houses to maintain the passive-efficiency ratings.

In order to ensure that these reforms are resilient enough to withstand future shocks like the 2020 pandemic or the coming climate emergency the national industrial planning framework must include a focus on strengthening and localising supply chains. This will have the added benefit of ensuring that the economic stimulus created by the housebuilding program is captured and retained within Scotland and, ideally, within the communities in which the houses are built.

## Social Justice

Social injustice pervades the entire housing sector. Planners build the wrong type of houses to meet demographic changes – typified by the lack of both larger social houses for families and smaller houses for single people – and tend to build them where they will attract the most profit rather than where they will increase the wellbeing of a community – this is especially highlighted by the rise of student accommodation and the intensification of short-term holiday lets. The private renter market in the UK has failed far too many people and has left people trapped with bills so high that escape via house ownership is impossible as they cannot save for a mortgage deposit. In the short term this may be addressed by a comprehensive system of rent controls<sup>10</sup> but in the longer term, the solution will be found in ensuring enough supply to meet demand in terms of price, location and house type. By building social housing of a higher quality than currently developed by the private sector, the public sector will force the raising of standards by private developers. By doing so in a way that delivers these houses at a cheaper price and with more sustainable finance, the public sector shall act as a ceiling on private rents (as any who wish to move to a public house at lower rent will have the option to do so).

After the Second World War the UK created an enviable legacy of housing policy. The rebuilding efforts led by Aneurin Bevan rebuilt and reshaped a broken economy. Investment was at the heart of this. Forty years ago, for every £100 spent on housing, £80 was spent on the buildings and £20 was spent on housing benefit. But in more recent decades, the focus has shifted towards private ownership, private renting and sustaining price rises as a form of capital investment rather than as a place to live. In the last decade or so, only £5 has been spent on housing construction for every £95 spend on housing benefit<sup>11</sup>.

Housing Benefit in Scotland in 2018-19 was £1.588 billion out of a total social security spend of £19.186 billion<sup>12</sup>, 8.3% of the total social security budget. The failure to create a secure and sustainable housing sector is a significant and continuous drain on the public sector.

Germany has managed to keep its house prices and rents stable over several decades which has contributed to wider benefits across the economy in terms of reduced inflation, higher spending power for residents and a refocus on private investment in the country (If one can make obscene profits from building and/or renting housing, then there's no need for you to invest in manufacturing – the obverse is also true).

Between 1970 and 2015, real house prices (i.e. after inflation) in the UK rose by almost a factor of five. By comparison, house prices in Germany remained almost entirely stable and were actually about 2% lower in real terms in 2015 than they were in 1970<sup>13</sup>.

House prices have been rising in Germany more recently, particularly since the 2008 Financial Crisis when low interest rates and low rates of returns in other sectors have made housing investments more appealing – but these reports have been couched in warnings of a coming housing bubble<sup>14</sup>.

The German phobia of inflation has served it well in managing housing as a fundamental social security rather than as an investment portfolio asset. Scotland should seek to replicate Germany's levels of price and rent stability across the housing sector. Security of supply



is key to this and the German housing sector is much more elastic than the UK's thus can respond faster to rising demand. This is combined with a well-regulated private rental sector aimed at securing the rights of tenants and focused on breeding a culture of long-term tenancies rather than pushing people out, pushing rents up and repeating until the market breaks. The rights of tenants to actually live in their homes, rather than to merely dwell in them temporarily, is also much stronger in Germany with the right to modify, decorate and generally customise one's rented home not just protected but culturally expected. This is a far cry from the (un)popular image of UK council houses where tenants cannot even change the colour of their front door.

The private market – both for owner-occupiers and in the rental market – needs to be stabilised and prices controlled. One way to do this – in addition to tighter regulations like rent controls<sup>15</sup> – is to increase the supply of houses for social rent and to increase the quality of social housing to a level that makes them an option that outcompetes the poor quality housing currently being built which, at the very least, will force the private sector to increase standards to keep up.

This paper represents only one step along the way of improving rental policy. Common Weal will produce further work in this field in due course including work on tenant governance models to secure and improve rights.

## Foundational Economics

The coronavirus pandemic has shown just how fragile the Scottish economy is. Warning signs had already been brewing through the increased rhetoric of trade wars, the increased debt load of the private sector (both households and businesses) and the low rates of redundancy and resilience within the system which made it increasingly vulnerable to shocks and disruptions. Even before the pandemic, there were warnings of another recession on the horizon – one that may still await us if we emerge from the pandemic lockdown without fixing those failures.

Within the Scottish housing sector, these failures are to be found in the high concentration of

housebuilding within just a few volume builders. These companies have an extended history of focusing on profit margin and speed of construction over quality (though not, ironically, volume of construction as a steady over-demand for housing leads to inflated prices). In January 2020, an audit of housing in England found that three quarters of new builds constructed since 2007 were of mediocre or poor quality and that at least five housing developments should have been refused planning permission outright based on their poor design<sup>16</sup>. The report went on to say that these findings represent no real improvement from a previous comparable audit in 2007.

This monopolistic control of housebuilding is not serving people who live in these poor quality houses and it is clear that the private sector will not act to improve until or unless it is forced to by tighter and more enforceable regulations and by simply being “out-competed” in both quality and in price by the public sector. Detractors of this kind of interventionist policy will complain of the public sector “crowding out” the private sector but this is only possible in a market that is operating to deliver an optimum product and reports such as the one above make it clear that for commercial housebuilding, this is far from the case. The public sector may “crowd out” the profit motive for building poor housing but it can do so by “crowding in” the type of house that people would actually be happy to live in.

Another problem has grown underneath the landscape of poor quality housebuilding. The lack of sustainable domestic supply of construction material is critical too. The Green New Deal will demand more sustainable building materials – Common Weal's Common Home Plan advocates that most GND-compliant buildings will be constructed substantially from wood and advanced timber products.

Around 80% of all construction materials – including around 60% of all construction timber – used in the UK is imported which leaves the domestic construction industry extremely vulnerable to trade shocks or economic disruption as is currently being experienced in 2020. This reliance on imports means that even if Scotland or the UK successfully implemented a mechanism to “end lockdown”<sup>17</sup> ahead of

other countries, the prospect of “restarting” an economic sector that is heavily dependent on imports from a country that is still locked down appears slim – this would also be the case in the future if political shifts such as the protectionist stance growing in the USA leads to critical imports being cut off, exposed to tariffs or otherwise disrupted.

A greater degree of economic resilience is required if we are to ensure that the foundations of the economy are strong and will be able to help to manage the climate emergency and few aspects of the economy are more foundational than being able to provide every person in the country with a decent and affordable place to call home.

## WHY SNIB NEEDS TO BE UPGRADED

The Scottish National Investment Bank is due to launch in late 2020. This bank will be provided with £200 million of operating capital by the Scottish Government every year on a cumulative basis for ten years, by which it will have the ability to finance £2 billion worth of investment at any given time. However, strict limits set by the UK Treasury prevent the SNIB from accumulating capital beyond this limit and from borrowing money in its own right in the form of bonds. If it was able to do this, the SNIB would then be able to capitalise on sources like pension funds – themselves desperately seeking sources of stable finance in a world where the only choices either are to take risks on the stock market or to buy government bonds with low or sometimes even negative yields.

Without the SNIB, Local Authorities may be able to use alternative sources of funding such as the Public Works Loan Board but this, too, comes with significant restrictions on loans. Other workarounds may also be possible – though part of the justification for SNIB was the lack of these alternatives beyond the disastrous legacy of PFI and successor schemes. The best possible solution to Scotland’s housing sector will involve a fully empowered SNIB and the Scottish

Government must step up calls for Treasury rules to be changed to allow this or for SNIB to be given dispensation from these rules. This need is made even more acute by the coronavirus pandemic. There is now an emergency need for a stimulus package to restart Scotland’s economy and the only vehicle that is capable of doing this in an optimal way is the SNIB.

## LAND VALUE CAPTURE

When the designated zoning for a plot of land changes and planning permission is granted, the value of the land can increase dramatically – particularly in the case where agricultural or industrial land is re-designated for residential purposes. Land price spikes can also occur in the vicinity of major upgrades to infrastructure such as a new railway station. This – in conjunction with direct speculation on land price itself – has been a major contributor to the rise in house prices over the past several decades.

Where the value of the uplift is captured by those who sell the land, it can represent a substantial windfall for those fortunate enough to own the assets – which may be a particular issue in Scotland where land ownership is so concentrated. Conversely, if regulations are in place such that land is purchased by councils at “existing use value” which would mean that new tenants would be protected against having to pay for the land value uplift and when councils do eventually sell the land the councils can benefit from the additional value created by the re-zoning.

In other Land Value Capture schemes, if a private organisation owns or is buying land which may uplift due to the creation of public infrastructure such as a railway then the council may charge the owner an annual rent or tax based on the value of the uplift – a particularly praised example<sup>18</sup> of this latter model is the Hong Kong Mass Transit Railway Corporation’s “Rail Plus Property” scheme. However the land value is captured, it can provide a valuable additional source of revenue for public bodies which can be directed to provide further public services as required as well as being a powerful mechanism

for avoiding speculation on land value which ultimately drives up prices for renters and house buyers. The advantages of land value capture for the public provision of housing should be as clear as the lack of such provision is to the advantage to those who benefit from the current private market. Further details on land value capture can be found in Common Weal's paper "Public Land Value Capture"<sup>19</sup>. A proposed amendment to the Planning (Scotland) Act 2019 to allow councils to purchase land at its existing use value passed early parliamentary committee stages but was dropped from the final bill.

## DESIGN FOR LIFE – COMMUNITIES, NOT DORMITORIES.

This paper examines the financial case for a program of SNIB-backed housing from the perspective of a single house. This is obviously just a snapshot of what a realistic program would entail. The danger of approaching the issue of housing supply from the angle of meeting arbitrary targets on numbers of houses built is that the program becomes one in which only houses are built. This is especially true in areas where land prices are high and so there is a market incentive to cram as many houses into an area as possible without any provision for other vital services, infrastructure and amenities. Just as a house is more than four walls and a roof, a community is more than rows of isolated dormitories where people retreat to sleep between work shifts.

This study has received information from more than one contact about areas in Scotland where new housing developments were constructed without any consultation or planning on the impact to the surrounding infrastructure to the result that schools built less than a decade ago are now facing the need to expand or rebuild to accommodate the additional demand placed on them.

Any program of housebuilding must design communities as much as it designs housing and it should see the entire community as a

whole rather than a connected series of parts. Parks may not attract rent but they are just as vital to an area as the houses which surround them and should not be treated as a regulatory burden placed on developers where they would otherwise simply build more houses.

Similarly, there remains a significant stigma surrounding the class issues of housing. As inequality has increased in the UK, so too has social segregation – which, in turn, has driven further inequality. Communities should be designed in a more integrated manner where people are not divided up into the "private estate" and the "council house estate". It may be that a certain percentage of SNIB houses in a particular community could be offered for sale rather than rent (or offered for part-sale, co-operative purchase or other innovate ownership models) and it is possible that revenue raised from this sale could be used to subsidise further the rent of particularly low income renters or to fund the adaptation of houses to accommodate people whose needs change due to disability or age related conditions to enable them to continue to live in their community. This proposal should, however, take heed of the previous failures of schemes such as "Right to Buy" which proved catastrophic for the Scottish public rented housing supply. Once built, there should be no "Right to Buy" of those houses designated for rent within the financial repayment period of the housing and any sale of such houses should be managed on not less than a like-for-like replacement basis.

From an economic perspective, space should be designed into communities for businesses – from the typical high street small and medium enterprises to, perhaps, community based office hot desks to allow larger companies to reduce the commutes of their staff and reduces the demand on the national transport infrastructure. Further upgrades of internet infrastructure would also allow more home-working of the kind seen during the 2020 pandemic which could potentially further reduce transport costs and carbon footprints as the carbon cost of a video conference can be less than 10% that of an equivalent face-to-face meeting<sup>20</sup>.

This kind of initiative would work closely with other SNIB missions such as SME investment or

local banking and finance hubs. It is worth reiterating that communities should not be content with simply becoming dormitory settlements with no lives of their own.

Future work by Common Weal will examine what we consider to be an ideal community for the 21st century and will draw up the principles by which they should be designed. It should be noted that many jobs cannot be worked from home and that these jobs are quite often both the most critical and the lowest paid<sup>21</sup> jobs in society so a broader Foundational Economics plan must include provision for decent homes with minimal commutes and costs for folk working these jobs too (as well as a broader campaign for better rights, conditions and pay for affected jobs and workers).

## MORE THAN FOUR WALLS AND A ROOF

The domination of the private sector and the “housing market” has had a deleterious impact on the quality of housing – particularly in heat efficiency – which is causing fuel poverty and has consequences for the efforts to decarbonise Scotland’s energy production.

The task of changing the way that buildings are constructed is substantial – though it is one primarily of adjusting regulations and providing the industry with the means to adapt supply chains rather than it being due to any particularly technological challenge. The larger issue lies in retrofitting or replacing existing building stock – some of it of particularly historical or architectural significance – but this task is not made easier by delaying it. Buildings constructed today to conventional standards are buildings which may be contributing to the problem of excess heating demand for half a century or more unless they are retrofitted or replaced. The retrofitting challenge is considerable, however, as many of the buildings which make up the existing stock were simply not designed to be retrofitted up to passive standards and the costs of doing so may exceed the lifetime costs of heating the inefficient house or may even exceed the cost of demolition and replace (a proposal which

may be appropriate in some circumstances but should be approached with caution and with the experience of prior such policies which were undertaken regardless of or even in spite of the loss of buildings of historic and cultural significance which were simply swept away in the name of “progress”). Scotland should formally adopt Common Weal’s position of a presumption against demolition<sup>22</sup> unless the case is strongly made otherwise.

Currently, the Scottish Government has stated an ambition<sup>23</sup> to retrofit all existing houses up to Energy Performance Certificate (EPC) Rating C efficiency by 2040 where technically feasible. This is not a bad plan as it stands but the gradualist approach whereby buildings are retrofitted up to C rating and then at a later date upgraded to “net zero carbon”, EPC A or “passive” standards may result in work having to be re-done on houses that were previously upgraded. It may also increase the complexity of the task as upgrading an inefficient house is not as simple as adding cumulative and independent upgrades until the desired rating is achieved.

For instance, a house which was rated at the top end of EPC rating D which was marked to be upgraded to C may only need marginal work done such as replacing the existing gas boiler with a newer, more efficient model. Upgrading that same house to zero-carbon would require replacing the gas boiler (no matter how efficient) with an electric one and upgrading to rating A may need extensive insulation work installed so that, in effect, the package of upgrades required to bring the house from C to A would be essentially identical to the package required to upgrade the house from D to A.

A more efficient and effective solution would be for the government to commission creation of a framework by which any given building can be assessed on its potential for a maximum technically feasible upgrade (i.e. to decide if the building could be upgraded straight from rating D to A or whether it would be limited to rating B without impinging on factors such as its appearance or fundamental structural elements). The advantage to this approach would be to significantly accelerate the reduction in Scotland’s heating demands – whilst every house could still be said to meet EPC rating C by 2040,

those which could easily meet rating A could be upgraded straight to that level well before any future increase in targets.

Another significant advantage would be to encourage the rapid acceleration of new building standards in the UK. The private sector will always experience a market force which encourages the building of houses to just barely above the minimum required standard. A gradualist approach to improvement over the next several decades may result in the construction of more buildings which need to be retrofitted and upgraded at a later date but there is also a more fundamental force wherein companies may have to adjust their supply chains and building practices to accommodate any rise in standards and therefore will experience significant disruption whether said change is incremental or substantial. Sources within the construction industry have told Common Weal that a preferable option to a gradualist approach of multiple changes to standards would simply be to state that all new buildings in Scotland should be built to passive standards (where buildings do not require significant energy to maintain adequate heating) or net-zero energy (where adequate heating can be maintained by on-site power generation such as solar panels) and a date set – such as three years from legislation – so that the relevant changes can be made. This report endorses that message and recommends that the Scottish Government should adopt as a priority the policy that all new buildings should be constructed to zero-carbon and net-zero energy standards if they are to receive planning permission.

A typical Scottish house built to conventional heating standards may have a heating energy requirement of 140 kWh/m<sup>2</sup> per year<sup>24</sup> and this figure has, on average, been reducing over the decades<sup>25</sup> as housing construction standards improved but remains much lower than adequate. For commercial buildings, the typical heating requirement is often substantially higher with a typical hotel or bar requiring more than 300 kWh/m<sup>2</sup> per year<sup>26</sup> to adequately heat.

Before deciding on a specific upgrade scheme, the Scottish Government should abandon the use of EPCs as an energy efficiency measure in the first place. Work published by Common Weal has called for the abolition of the EPC system<sup>27</sup>

as it is overly reliant on idealised modelling of construction materials rather than the actual measurement of building energy efficiency in situ and in use. Nonetheless, the logic of the above argument would still apply as a single step retrofit to a building's maximum feasible capability will be superior to incremental change regardless of how the actual energy efficiency metrics are measured.

Multiple standards now exist which greatly improve on this level of efficiency and move towards “passive” heating standards. Two prominent passive standards are PassivHaus (for new buildings) and EnerPhit (for retrofits of existing buildings) which have maximum space heating requirements of 15 kWh/m<sup>2</sup> per year<sup>28</sup> and 25 kWh/m<sup>2</sup> per year<sup>29</sup> respectively. This opens the possibility of ultimately replacing existing conventional buildings with new or retrofitted ones which reduce their heating demand by up to 90%. The task of decarbonising the energy supply chain would be made much easier as heating currently comprises around 51%<sup>30</sup> of Scotland's total energy consumption and residential buildings are responsible for 16.4%<sup>31</sup> of Scotland's overall greenhouse gas emissions. Other benefits such as reducing fuel poverty and generally making the running of dwellings and businesses more efficient – freeing money for other opportunities – would follow automatically from such a program and are more than worthy goals in and of themselves.

## CASE STUDY – THE IMPACT OF SNIB FUNDING ON PUBLIC-OWNED RENTED HOUSING

The SNIB will be in the near-unique position in Scotland of being able to offer low cost, patient finance on a scale simply not possible via commercial banks. As of January 2020, a typical retail mortgage would be sold on the basis of a compound interest rate of approximately 4.3%. It would be rare for such a mortgage to be fixed for a period of more than five years and extraordinary if such a rate was fixed for a 30-year term or longer. By contrast, the SNIB

would be able to issue 30 year (or longer) bonds based on a simple interest yield of around 2.25%. These bonds would be fixed for the full term of the bond. The funds raised through these bonds could be loaned to Local Authorities and/or Housing Associations at a small margin of an additional 0.5% which would allow the SNIB to make a sustainable profit whilst still providing a source of finance which is stable, reliable and cheaper than other sources of funding currently available to such bodies. This kind of patient finance means that there is the potential to offer tenants a guarantee of rents rising only by inflation for the duration of the tenancy – something which, in itself, could result in a revolution in the housing sector.

The financial efficiencies go beyond the direct credit repayments. Contacts within the housing industry have repeatedly complained that the current borrowing landscape – particularly for energy efficient housing – is fragmented and constantly shifting. In order to finance a development, a proposal may have to apply for multiple loans, grants and guarantees which greatly complicates the task of bringing the project to fruition. Even once it is complete, by the time the next project is planned, grant schemes may have closed, funds may be oversubscribed and loan schemes may have changed their interest rates or conditions so that the work to secure a second project is just as difficult, if not more so, than the first. By massively simplifying and stabilising the investment landscape, the SNIB will offer certainty, security and efficiency which will surpass anything that can be offered at the moment.

For the purpose of illustrating the potential impact of this financial model, specifications were obtained confidentially from the owners of a rental housing development in Scotland who have costed the replacement of an ageing housing estate with new constructions. This project looked at replacing a development of 52m<sup>2</sup> single bedroom terraced housing. While these houses would not suit every household (particularly families) these houses do fill a valuable need for housing provision for older people and for people with accessibility needs as well as an increasing number of single people and first time households. This real-world study

also represents one of the very few costed passive housing developments in Scotland at any scale beyond a single house. After this modelling, a section is included extrapolating the data to give an idea of the benefits of building larger houses – such as a 3-bedroom family home – using these principles. It is very likely that this extrapolation will overestimate the costs involved for building this size of house and that the ramping up of passive house construction across Scotland will lead to supply chain and material efficiencies that bring down the costs of a full scale housing strategy even compared to the real-world model used here. However, this will serve to lead to even cheaper costs for renters in these houses and even more incentive for this plan to be adopted at scale.

Two scenarios have been modified from the real-world financial model – a “conventional build” like-for-like replacement of the existing dwellings and the development of similarly sized houses built to passive standards (requiring less than 25 kWh/m<sup>2</sup>.year to heat).

Four scenarios are presented outlining the costs of building and maintaining a conventionally built house (“C”) and a passive house (“P”) each being funded by a commercial bank finance model (“B”) and a finance model based on a SNIB bond (“S”).

## Assumptions

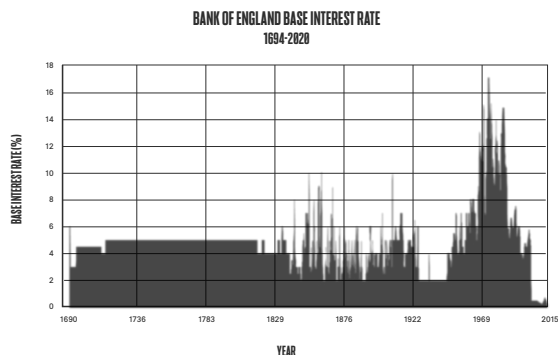
### Finance Interest Rates

Both the commercial finance and SNIB finance models are assumed to carry a fixed interest rate for the full 30-year duration of the loan. Whilst this is realistic and indeed trivial to assume in the case of the SNIB model this would be extraordinary in a real-life commercial loan model. However, as Bank of England base rates are presently at a historic low point and, barring present emergency measures, the general strategy of the Bank is to eventually raise the base rates up to a more historically “normal” level of around 5% in the long term, it can reasonably safely be assumed that commercial rates are more likely to rise in future than they are to fall. The commercial finance model is therefore more likely to underestimate the costs involved rather than to overestimate them. As of

January 2020 – prior to the emergency measures brought in to deal with the coronavirus pandemic and thus the most reasonable metric on which to base near-term future plans post-pandemic – a typical commercial mortgage rate for a house of the type used in this model would attract an interest rate of around 4.3%. For the purposes of this paper, a rate of 4.5% fixed for the full 30-year term. The SNIB will finance the houses by issuing a 30-year bond with a fixed yield of 2.25% and would lend the money to local authorities and/or Housing Associations at a rate of 2.75% fixed for the full 30-year term of the loan.

## Inflation

One of the core responsibilities of the Bank of England is to control inflation and to hold it to an annual rate of around 2%<sup>32</sup> though in practice it tends to vary around this value – sometimes quite substantially. In the UK, the rate of CPIH inflation has tended towards an average value of about 2.4%<sup>33</sup> over the past decade. For the purpose of this case study, a static rate of inflation of 2.5% is assumed.



## Energy use

One of the principal ongoing costs of housing is energy use – especially heating. As outlined above, the benefits of building to passive heating standards include a reduction in outgoing heating payments albeit at price of a slightly higher initial construction cost compared to a conventional build. The development used for this case study estimated that the electric storage heaters used in the conventional buildings demand around 190 kWh/m<sup>2</sup> per year to adequately heat or 9,880kWh/year for the 52m<sup>2</sup> dwellings used in this study. At an assumed standard rate of £0.13 per kWh, this translates to an annual heating bill of approximately £1,284 (or £107 per month). By

contrast, the dwellings built to passive standards were estimated to have a heating requirement of around 21 kWh/m<sup>2</sup> per year (1,092 kWh/year per house) which, again presuming electric heating at a standard £0.13/kWh tariff, translates to an annual heating bill of £142 (or just under £12 per month).

It should be noted that as of the period immediately before the pandemic crisis, the price of gas heating is significantly lower on a per unit basis than the cost of electrical heating with gas heating costing around £0.03 per kWhr compared to the aforementioned £0.13 per kWhr for electric heating. However, the Scottish Government's ambitions for Scotland to become a carbon neutral country within the next 30 years are incompatible with the installation of gas heating in new buildings designed to last longer than this. Buildings constructed today with gas heating will require the removal and refitting of the building's heating system before the decarbonisation deadline. The development on which this paper is based happened to recommend the installation of electric storage heating in both the conventional and passive construction models but it would be reasonable to recommend that this or similar practice is extended to all new Scottish constructions where possible. As shall be seen, the reduction in overall energy costs from increased building efficiency should more than compensate for the per unit increase in heating costs associated with electric rather than gas. It should also be noted that the use of electricity to heat homes would – in all likelihood – be the most expensive option for the vast majority of situations even after the heating sector has decarbonised. Common Weal has published proposals for district heating networks fueled by a variety of zero-carbon energy options such as solar thermal, geothermal, biomass and hydrogen, which would further reduce the per-unit costs used in this model.<sup>34,35</sup>

This case study assumes that the cost of energy will remain flat in real terms for the duration of the loan (i.e. shall rise only by inflation), though historically the cost of energy in the UK has often risen at a substantially faster rate than overall inflation.

Non-heat energy use (i.e. lighting, appliances, cooking etc) contributes to a substantial ongoing cost of living with the average dwelling of approximately the size assumed in this study

consuming around 2,900 kWh/year<sup>36</sup> worth of energy. Whilst passive housing typically allows some savings and efficiencies from technology such as LED lighting, many of those upgrades could be made in a modern conventional house as well and the bulk of home energy use is due to appliances such as cookers, refrigerators and washing machines which are similarly reasonably independent of the design of the house (barring incoming technologies such as smart metering and active control appliances taking advantage of off-peak rates). For these reasons, non-heat energy use has been excluded from the calculations in the study.

### Land Value Capture

The development on which this case study is modelled is based on an existing housing development being replaced with another housing development. As such, no re-zoning is taking place and no significant additional infrastructure is being constructed which will significantly uplift the value of land in the area. However, this may not be the case in most developments. The cost of land – even with land value capture – is highly variable but this model assumes a land cost of £10,000 per unit. This is comparable to a typical brownfield site in Scotland in 2020 and is substantially above the cost of agricultural land (where typical prices are equivalent to £100-£300 for a 100m<sup>2</sup> plot<sup>37</sup>). This £10,000 per unit cost has been included in the model for completeness but the cost of purchasing even this generous price of land could be recouped by selling 10% of the dwellings in the development for owner-occupation (in line with the principles of mixed communities outlined in Chapter 6). The revenue from these sales could effectively be used to subsidise the land costs of the public rented dwellings.

### Construction and Lifecycle Costs

Houses, like everything else, require regular maintenance once built though with smart design and an eye to building for quality rather than price and profit margin, these costs can be minimised. These lifecycle costings also include the repair and maintenance of housing materials as well as any money which can be recouped through the re-use and recycling of those materials when the house is eventually

demolished. By building with these factors in mind, housing can be made more efficiently and with an overall lower economic impact. Whilst the deep analysis of the lifecycle costs of housing is beyond the scope of this paper; these studies do exist in the academic literature<sup>38,39</sup>. The study which informed this paper indicated that a conventional house which cost around £113,000 to build would require £63,000 worth of maintenance over its 30 year lifespan. The passive house model was calculated to cost around £119,000 to build but estimated to only require £54,000 worth of maintenance over 30 years. With a solid program of engineering development and investment as well as support from a Scottish National Infrastructure Company<sup>40</sup>, it may well be possible to reduce lifecycle costs even further and to extend the working life of buildings (particularly in the case of public buildings) by decades or even to well over a century although at some point the increased upfront construction costs will inevitably outweigh the lifecycle savings. This said, there may still be merit in pushing this limit as there are substantial financial security and wellbeing gains to be made by trading off a slightly higher monthly rent against the risk of a large and unexpected repair bill when something like a boiler or a section of roof fails.

Lifecycle considerations may become significantly deeper if it is considered that many conventional buildings are designed with a view towards ease and speed of construction in mind rather than ease of repair, replacement and upgrade. The author, like many, has experienced several instances of repairs to heating and plumbing systems being made significantly harder and more complicated due to the initial design of the house and utilities limiting access to, say, a leaking pipe or seal.

This is a topic worthy of separate study in and of itself but if buildings are designed to last longer and if increased life expectancy brings with it the expectation of lifestyle changes (such as increased need for accessibility aids) then there is a case to be made that our homes should be designed in such a way as to actively facilitate upgrades and repairs. Design changes such as building access panels or removable sections into walls and blueprints designed such that users can more easily modify rooms, doors and



stairways to install disability aids or even simply to allow greater options for customisation as fashions and technology changes may well act to reduce lifecycle costs and help make a house feel more like a home.

In this scenario, the lifecycle costs for the public rental homes are spread over the lifespan of the house and added to the monthly rent for the tenant. It is presumed that housing repairs – when required – would be covered by the Local Authority free at the point of need. This would eliminate the stress and worry of not being able to afford the cost of repair of a sudden breakdown such as an electrical, heating system or structural failure.

## Scenarios

Four scenarios have been considered based on a development of one and two bedroom, one-storey terraced houses based on building either to a typical conventional building standard or building to passive standards and comparing whether the development is funded via a commercial bank mortgage (which represents the dwellings being purchased for private rent) or whether it is funded via a SNIB bond.

### Scenario CB: A Conventional House Financed by a Commercial Bank

This scenario provides the baseline for comparison for the other scenarios and represents a conventional house in the private sector either rented to or owned by the occupant. These buildings would be far from ideal, being built to a basic standard and being difficult and expensive to heat especially in the winter.

This scenario would also involve comparatively substantial lifecycle costs to maintain the property – particularly as it would have been built to maximise the profit margin for the developer.

A house built on this model would cost around £113,000 to build on top of £10,000 worth of land, would require £1,285 per year to adequately heat and would require around £63,000 in lifecycle and repair costs over a 30-year lifespan. It is

calculated, based on the relevant assumptions above including a mortgage interest rate of 4.5%, that this property would cost £818 per month to rent, maintain and heat and attract total costs of £343,749 over a 30-year period. This provides the baseline for comparison with the other scenarios.

### Scenario CS: A Conventional House Financed by the SNIB

If the mission of the SNIB was deliberately set to its least ambitious level, then it could be imagined that all it would do is simplify the lending landscape without doing anything to improve the quality of the housing stock. In this scenario, houses would still be built to the current conventional standards but the lowered costs of financing the loans could be passed on to tenants and owners. The SNIB would still be able to leverage its patient finance model to essentially offer the security of a loan which had a fixed interest rate for the entire payback period. It is assumed in this scenario that any efficiencies resulting from the simplification of the lending landscape would be captured by the developer – probably resulting in increased profits for the company.

Compared baseline scenario, using the SNIB to finance a conventionally built house would cost £313,544 over 30 years and thus would be £30,205 cheaper than the baseline scenario over the lifespan of the house. The monthly rent, lifecycle and heating costs of the house would be £564 – a monthly saving of £255 for the occupier compared to the baseline model.

### Scenario PB: A Passive House Financed by a Commercial Bank

If the SNIB failed to launch or was not used to fund housebuilding Scotland would still be faced with the challenge of decarbonising its energy demands and reducing fuel poverty and this role would be left substantially to the private market. The Scottish government could conceivably do this by tightening regulations so that all new constructions are built to near-passive standards<sup>41</sup> but otherwise provide no financial infrastructure to support building them. In this scenario, a mortgage similar to the one used to build the conventional one in Scenario CB is instead used

to build a house to passive energy standards. Passive houses cost a little more to construct than a conventional house, around 5% more in this example, but experience lower lifecycle costs and lower heating costs. This effectively means that part of the ongoing cost savings is “front-loaded” onto the upfront costs. However, the financing for those upfront costs attracts interest whereas, for example, your heating bill due next year does not. This somewhat erodes the potential savings of building a passive house in terms of the monthly costs.

A passive house built on this model would cost £119,000 to build in addition to land costs of £10,000 and would require a little less than £740.45 per month to rent, maintain and heat which is a monthly saving of £77.30 compared to Scenario CB. This model translates to a 30-year total cost of £295,835 which represents a saving of £47,914 over the lifetime of the dwelling compared to the conventional building. This is a clear saving compared to the baseline scenario and living in a passive house would make a substantial difference for many people who live precarious existences or experience fuel poverty (a passive house would greatly alleviate the need for some to “choose between heating and eating”). In this scenario, the advantages of passive housing in terms of health, wellbeing and economic sustainability would be met. However, this scenario clearly fails to live up to the potential of what is possible with a housing strategy that is properly supported by the SNIB.

### Scenario PS: A Passive House Financed by the SNIB

The Scottish Government could take a radical path on housing by deciding that not only would regulations be increased to mandate passive or net-zero energy requirements on new buildings but also that it would take a direct hand in building a new generation of publicly rented housing fit for the 21st century. This kind of investment is generally considered extremely safe – more so than the speculation in house ownership which contributed to the 2008 Financial Crisis – as this kind of rented accommodation is generally always in high demand (subject to the geographical constraints of the supply/demand heat mapping mentioned earlier) and thus could be expected to attract substantial capital from sectors such as

pension funds.

A passive house built using finance from a 30-year SNIB bonds would cost £263,859 over a 30 year lifecycle to financially service, properly maintain and adequately heat. This represents a saving of £79,890 compared to the baseline scenario over that period or around 23% of the cost of buying and running a home. A monthly rent to cover finance, lifecycle and heating would be £473.34 – a saving of 42% compared to the baseline scenario and representing a saving of £344.42 per month for the tenant.

The Appendix includes data tables of all of the figures outlined for each of these scenarios as well as charts showing the overall lifetime and indicative “first month” costs involved in each scheme.

## SCALING UP – INDICATIVE COSTS FOR A FAMILY HOME

As stated previously, the scenarios presented above were based on the best real-world data obtainable but represent only a single type of house – a small, single bedroom bungalow. This type of house is valued by many and will continue to be a part of the housing mix but it is obviously not the only type of house required in Scotland. The model developed above can also be extrapolated to different sizes and values of house.

For instance, a 78m<sup>2</sup>, 3-bedroom semi-detached house with a final market value of £220,000 is fairly typical for many parts of Scotland. Houses of this size are often heated with gas but from 2024 new builds in Scotland will have to be heated by renewable sources. Until and unless the Scottish Government adopts Common Weal’s proposals for extensive use of district heating systems<sup>42</sup>, this will mean locking new housing into using electricity for heating either through storage heaters or through air-source heat pumps and unless radical improvements are made to heating efficiency standards this will very likely lead to higher heating costs even if the efficiency of heat generation is improved.

Extrapolating the baseline CB housing model for a typical 3-bedroom house based on conventional building standards and thermal efficiency would result in a cost to the renter of £1,406 per month to finance, heat and maintain.

If, however, this house was built to passive standards using the SNIB finance model developed here, it would cost around £231,000 to build (based on a 5% construction premium – likely an overestimate considering that this final market value also includes the cost of land and developer profits which would be unaffected by the build quality premium) but would only cost around £822 per month to finance, heat and maintain. This represents a saving of £584 per month.

## CONCLUSION

It is clear that Scotland needs a radical rethink of housing on a scale not seen in nearly a century. The demands of energy efficiency, fuel poverty and the decarbonisation of Scotland are looming and a shift towards passive housing will make a great contribution towards many of these problems within one solution. Additionally, decades of house price and land speculation have distorted “the market” to the point where entire generations of people are being effectively locked out of ever owning a house or having a reasonable chance of being allocated a public rented house. This leaves those people at the mercy of an increasingly unaffordable private rented sector. By offering sufficient public rented housing to everyone who desires one, the SNIB can act as a brake on the continued rise in the costs of living and, by almost eliminating heating costs, a major factor in the volatility and uncertainty in the costs of living can be lifted from the lives of those who are increasingly living in a state of continual financial stress.

This program need not be seen as a direct impingement on the right of the private housing market to continue to operate but it is clear that when potential buyers or renters are offered a choice of a passive house which costs less than a conventional house of comparable size then the private market will need to substantially adapt

its business model to lower prices and increase quality in order to effectively compete even in the absence of direct regulatory improvement to enforce increased standards (though these, too, should be applied).

The Scottish Government should therefore support a program of building extremely high quality and truly affordable houses for public rent on a “demand-led” basis in areas guided by a national “heat map” of supply and demand and by a greater study of economic and infrastructure support. If support by a properly empowered National Investment Bank, this subsidy-free program would allow it to develop a block of long-term, stable and relatively safe investments lasting several decades with which to underpin and secure its investment portfolio against somewhat shorter term or riskier investments such as support for small and medium businesses.

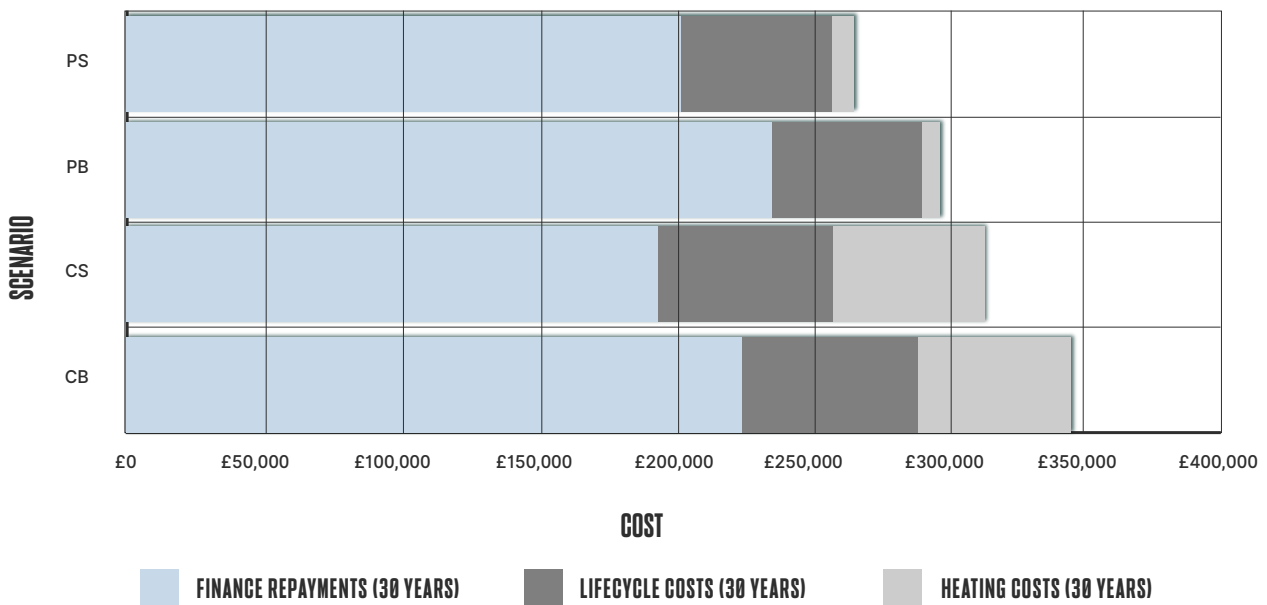
The UK was once proud of its policy of housebuilding for the wellbeing of its citizens but has abandoned that policy in favour of allowing the “free market” to extract as much wealth as possible from renters and owners while providing as little in terms of quality as possible. If the Scottish Government wants to truly achieve its ambitions as a country favouring wellbeing over GDP and of meeting out obligations to avert the climate emergency, then it should immediately follow the plan developed in this report and start building the houses that we all deserve.

# APPENDIX – HOUSING COST COMPARISONS

Scenario Key – C – Conventionally built house. P – Passive house. B – Conventional finance model. S – SNIB finance.

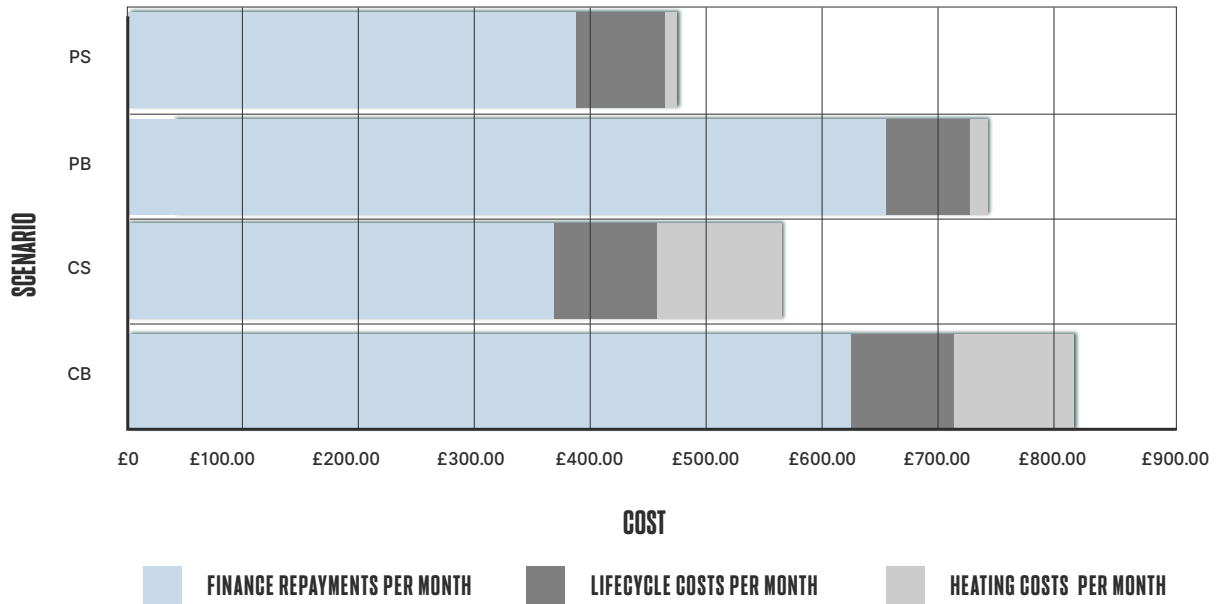
Scenario	Build Costs + £10k Land Price	Lifetime Lifecycle Costs	Heating Costs (Year One)	Total Cost - 30 Years	Lifetime Saving vs. Scenario CB
CB	£123,000	£63,000	£1,285	£343,749	£0
CS	£123,000	£63,000	£1,285	£313,544	£30,205
PB	£129,000	£54,000	£142	£295,835	£47,914
PS	£129,000	£54,000	£142	£263,859	£79,890

## HOUSING SCENARIOS LIFETIME COSTS



Scenario	Finance Repayments per Month	Lifecycle Costs per Month	Heating Costs per Month	Total Cost per Month	Monthly Saving vs. Scenario CB
CB	£623.22	£87.50	£107.03	£817.76	£0
CS	£368.53	£87.50	£107.3	£563.07	£254.69
PB	£653.62	£75.00	£11.83	£740.45	£77.30
PS	£386.51	£75.00	£11.83	£473.34	£344.42

## HOUSING SCENARIOS FIRST MONTH COSTS



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