

## 5 Delivery of rapid build housing

- 5.1** In April 2022, following the Russian invasion of Ukraine and the ensuing humanitarian crisis, Government agreed a range of measures to boost the supply of accommodation for refugees arriving from Ukraine i.e. beneficiaries of temporary protection (BOTPs). These measures included a rapid build, volumetric modular units option to be led by the Office of Public Works (OPW) on a pilot basis.<sup>1</sup> Rapid build refers to the method of construction i.e. manufactured offsite, rather than conventional construction onsite.
- 5.2** The OPW developed proposals for a pilot 'proof of concept' programme which was approved by Government in June 2022. The development of 500 modular units across 20 potential sites — to accommodate up to 2,000 people — was to be completed by end February 2023 at a projected capital cost of €100 million i.e. €200,000 per unit.
- 5.3** The Department of Children, Equality, Disability, Integration and Youth (DCEDIY) is the approving authority for the rapid build housing programme, and will assume ownership of the modular units on completion. It also has responsibility for their future use. The OPW, as the sponsoring agency, is responsible for rolling out the programme on an agency basis on behalf of DCEDIY.
- 5.4** The roll-out of the programme was classified by Government as a 'matter of extreme urgency' for procurement purposes, due to the need to deliver the modular units within a tight timeframe. The OPW procured the main contractor for the project using the negotiated procedure without prior advertisement.<sup>2,3</sup>
- 5.5** The Department of Housing, Local Government and Heritage (DHLGH) had responsibility for identifying publicly-owned sites that might be suitable to locate the rapid build modular units, while the Minister for Housing, Local Government and Heritage provided planning exemptions to facilitate the speedy delivery of the programme.<sup>4</sup>
- 5.6** A prototype design and specification in compliance with building regulations was developed by the OPW in conjunction with the Construction Industry Federation. The design is based exclusively on rigid-frame volumetric structures using modern methods of construction (MMC) with a full factory finish, a high energy-efficiency rating and an expected useful life of 60 years.<sup>5</sup>
- 5.7** In July 2023, Government approved an expansion of the programme to accommodate up to 2,800 people by the end of March 2024. The original design, for single-storey units to accommodate four people each, would require 700 units. A plan was developed for a small number of two-storey units to accommodate six people each, and the number of individual units required was adjusted to 694.
- 5.8** In February 2024, the Minister for Children, Equality, Disability, Integration and Youth agreed to reduce the planned delivery to 632 units. Planned delivery as of June 2024 is 654 units to accommodate up to 2,640 people by April 2025. A summary of key decision dates and events up to August 2024 is included in Annex 5A.

<sup>1</sup> The option was subject to funding being sanctioned by the Department of Public Expenditure, National Development Plan Delivery and Reform.

<sup>2</sup> [S.I. No. 284/2016 — European Union \(Award of Public Authority Contracts\) Regulations 2016.](#)

Regulation 32(2)(c) allows the use of the negotiated procedure without prior publication in instances of extreme urgency.

<sup>3</sup> Tender submissions from six building contractors were evaluated as part of the procurement process.

<sup>4</sup> [S.I. No. 306/2022 — European Union \(Planning and Development\) \(Displaced Persons from Ukraine Temporary Protection\) Regulations.](#)

<sup>5</sup> The units were procured from five manufacturers, following a tender competition by the main contractor.

## Focus of the examination

- 5.9** This examination was undertaken to review
- how the rapid build housing programme has performed against targets
  - whether the State's interest was adequately protected under the main programme contract, and
  - whether an assessment has been carried out of the success/feasibility of the pilot delivery mechanism for future use.
- 5.10** The examination team interviewed DCEDIY and OPW staff, reviewed relevant documentation and visited one of the development sites nearing completion.

## Planned programme delivery

### *Initial plan — 500 units*

- 5.11** The delivery of the 500 units by the end of February 2023 — an elapsed time of eight months — was considered to be an ambitious, but achievable timeframe. In November 2022, the Department of Public Expenditure, National Development Plan Delivery and Reform (the Department of Public Expenditure) provided sanction for capital investment of €100 million for delivery of the modular units and an annual non-capital allocation of €1.25 million for facilities management and maintenance from 2023 onwards.
- 5.12** The sanction was subject to a number of conditions, which included, *inter alia*, full compliance with the *Public Spending Code*.<sup>1</sup> However, the examination team found that DCEDIY did not prepare a strategic assessment report or business case reports (preliminary and final), as required by the Code for projects costing more than €100 million. Independent external assessments were also not carried out at the prescribed key decision points.<sup>2</sup>
- 5.13** DCEDIY stated that while the *Public Spending Code* and other requirements, such as procurement, were substantially complied with during the programme, the programme delivery timeframe required that certain elements had to be bypassed or addressed in an alternative or accelerated manner.
- 5.14** In response to the sanction letter, DCEDIY informed the Department of Public Expenditure (also in November 2022) that the OPW had carried out a review of the costs for delivery of the programme and that the total cost of rollout was now estimated at €140 million. The increase of €40 million was mainly attributed to costs not included in the original budget e.g. main contractor costs, VAT, OPW direct costs and utility contributions.

<sup>1</sup> The [Public Spending Code](#) was replaced by the [Infrastructure Guidelines](#) with effect from 1 January 2024.

<sup>2</sup> External assessments are required following completion of (i) the preliminary business case and (ii) the detailed project brief and procurement strategy stages of a project's lifecycle.

<sup>3</sup> Examples of abnormal site conditions cited include the removal of invasive plant species, presence of rock, high water tables, sloping sites, significant ESB connection works, foul sewer diversions, archaeological finds, and security requirements resulting from protests and anti-social behaviour.

- 5.15** A further review of costs by the OPW in January 2023 identified that the estimated delivery cost had increased to just over €155 million — a 55% increase on the original estimate. This represented an average cost of €310,000 per unit. Most of the increase between November 2022 and January 2023 was attributed to the projected costs for site development works which had increased by an average of approximately €18,000 per unit during that period. The OPW stated that this was primarily because some of the sites proposed turned out to be smaller than originally envisaged, with capacity for fewer than 30 units, and with significant, unexpected abnormal site conditions.<sup>3</sup>

### **Revised plan — 700 units**

- 5.16** In October 2022, Government approved, in general terms, an expansion of the programme — subject to discussions with the Department of Public Expenditure — to assess the additional cost for both capital and facilities management. On this basis and with DCEDIY approval, the OPW instructed the main contractor in December 2022 to increase the number of units to be delivered by 200. The timing of the decision meant that the additional units could be purchased at the original agreed price.
- 5.17** In January 2023, the OPW estimated the cost of delivering the 700 units at €237 million. This represents an average unit cost of €339,000 — 70% higher than the original estimated average unit cost of €200,000.<sup>1</sup> Formal approval for the revised output and the additional cost was not sought or received from Government until July 2023, seven months after the OPW had instructed the main contractor to acquire the additional units. The Department of Public Expenditure did not sanction the increased expenditure until September 2023.
- 5.18** DCEDIY has stated that formal approval could not be sought until the Department of Public Expenditure was satisfied with the memorandum for Government. However, the relevant stakeholders were aware at all times of the circumstances giving rise to the increased expenditure.
- 5.19** While a clear delivery timeframe for the expanded programme was not provided to Government as part of the formal submission in July 2023, it was envisaged that, due to the lack of availability of suitable sites, over half of the 700 units would not potentially be delivered until Q1 2024, approximately one year later than initially planned.<sup>2</sup> The July memorandum for Government also noted that the increased budgeted costs were due in the main to
- an increase in the size of the units to comply with housing standards and building regulations
  - a provision for potential site abnormalities/site enabling works — the original budgeted on-site costs were based on those required for social housing on greenfield sites without any abnormalities<sup>3</sup>
  - a dilution of economies of scale due to the smaller than anticipated size of some of the sites.
- 5.20** DCEDIY stated that other factors contributing to the increased budgeted cost included project specific price increases; and wider economic and inflationary measures, such as supply chain difficulties and energy cost increases.

### **Further revised estimates**

- 5.21** Between July 2023 and January 2024, the estimated programme delivery cost was revised on at least four occasions.<sup>4</sup>
- 5.22** The OPW has stated that the estimated programme delivery cost is constantly monitored and reviewed, in response to various unknown costs and the realisation of additional costs associated with the development of the sites and related abnormal site conditions.

<sup>1</sup> The original estimated cost did not include a provision for furniture, fittings and equipment which was estimated in January 2023 at around €8,600 per unit.

<sup>2</sup> By end July 2023, three sites had been completed and a further six sites were at different stages of construction.

<sup>3</sup> Site enabling works and site abnormalities are terms that are used interchangeably in the related documentation between the OPW and DCEDIY.

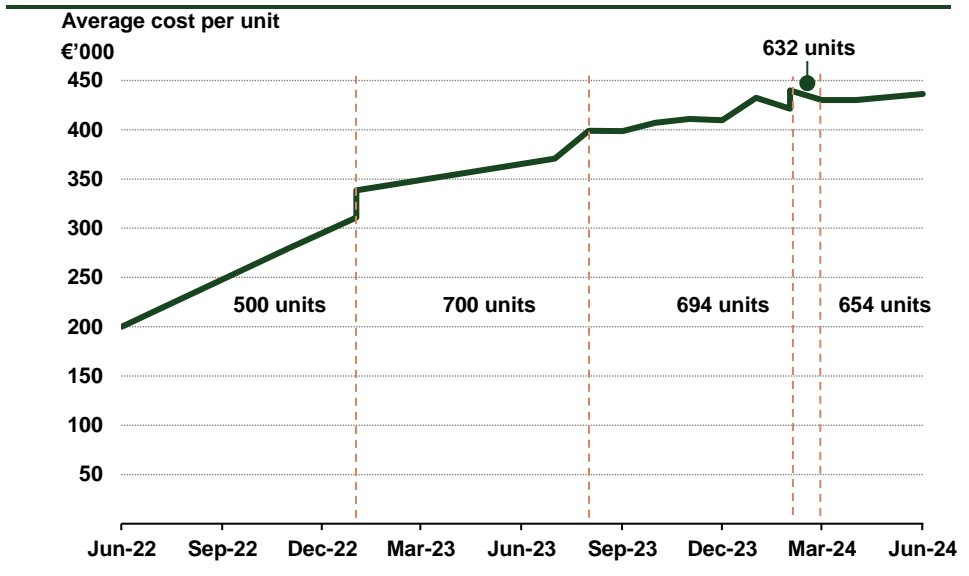
<sup>4</sup> Quantity surveyors (QS) engaged by the OPW to, *inter alia*, provide cost management services for the programme, submit monthly cost reports to the OPW which set out the costs committed and spent to date and the forecasted costs to completion, which take into account the commercial risk costs associated with the programme.

**5.23** DCEDIY stated that the revision of cost estimates at various stages was a direct result of the emergency nature of the programme, where sites were only made available and assessed as the programme unfolded. It stated that this introduced a level of uncertainty which would not be present in or directly comparable with other similar programmes, such as the delivery of social housing developments.

**5.24** In January 2024, based on concerns at the increasing costs and the lack of availability of suitable sites, the OPW presented DCEDIY with a number of options for consideration to complete the programme, but which would not deliver on the full planned output. The OPW has stated that the lack of availability of suitable sites to complete the programme was a major factor contributing to the proposed reduced delivery.

**5.25** In February 2024, the OPW informed DCEDIY that based on a worst case scenario, completion of the programme by end 2024 would cost an estimated €300 million — an average cost of €432,000 per unit (see Figure 5.1).<sup>1,2</sup>

**Figure 5.1 Movement in estimated unit cost, June 2022 to June 2024**



Source: Office of Public Works. Department of Children, Equality, Disability, Integration and Youth.

1 In January 2024, DCEDIY requested that the OPW identify and revert with the worst case scenario overall.

2 The average cost per unit of €432,000 is based on 694 units to take account of the decision to deliver 12 two-storey units with a higher accommodation capacity than the single-storey units, while still maintaining the planned 2,800 bed spaces.

3 The 632 units comprise 620 single-storey units and 12 two-storey units.

4 The average cost is based on the total number of units delivered and does not distinguish between the overall cost of single-storey units and two-storey units.

**5.26** The Minister for Children, Equality, Disability, Integration and Youth agreed on 16 February 2024 to a reduction of 62 (from 694 to 632) in the overall number of units to be delivered, at a revised estimated cost of €278 million — an average cost per unit of around €440,000, and a 120% increase on the original June 2022 estimated costs.<sup>3,4</sup> The target delivery timeline was extended to end December 2024 (see Figure 5.2).

**5.27** Subsequently, in March 2024, the planned delivery was increased to 654 units due to the final site (at Clonmel, County Tipperary) being able to accommodate more units than initially envisaged. In June 2024, the estimated overall cost was revised upwards to €285 million — an average cost per unit of around €436,000. Completion of the Clonmel site has been delayed to April 2025, due to disruptions from ongoing protests at the site.

**Figure 5.2 Rapid build housing delivery plan, June 2022 to June 2024**

	Initial plan June 2022	Revised plan July 2023 <sup>a</sup>	Revised plan February 2024 <sup>b</sup>	Revised plan June 2024
Number of units <sup>c</sup>	500	700	632	654
Number of persons to be accommodated	2,000	2,800	2,552	2,640
Expected cost	€100 million	€237 million	€278 million	€285 million
Average cost per unit	€200,000 <sup>d</sup>	€339,000	€440,000	€436,000
Planned completion	February 2023	March 2024	December 2024	April 2025

Source: Office of Public Works. Department of Children, Equality, Disability, Integration and Youth. Analysis by the Office of the Comptroller and Auditor General.

- Notes:
- a While Government approval for the revised plan was received in July 2023, the expected cost of delivery of €237 million was based on January 2023 estimates.
  - b Plan approved by the Minister for Children, Equality, Disability, Integration and Youth.
  - c Single-storey units were planned for delivery in June 2022 and July 2023 (each accommodating four people). Subsequent plans include 12 two-storey units (each accommodating six people).
  - d Excludes costs for fixtures, fittings and equipment. Around €8,600 per unit is included in the July 2023 estimate for fixtures, fittings and equipment. This increased to around €11,000 per unit in the June 2024 estimate.

### **Target delivery timelines**

- 5.28** Overall, programme planning suffered from significant fluctuation, much of which was due to the uncertainty associated with site availability. There have been at least three revisions to the target programme completion dates since the pilot proof of concept programme first commenced.

### **Programme critical dependencies**

- 5.29** At the outset, the OPW identified a number of critical dependencies impacting on the viability of the programme. These included
- the availability of suitable sustainable sites for the modular units
  - agreed viable long-term uses for the modular units when the need for accommodation for Ukrainian refugees had passed
  - exemptions from normal planning regulations to facilitate the speedy preparation of sites and the rapid deployment of the modular units.

### **Availability of suitable sites**

- 5.30** In May 2022, the OPW stated that the modular homes programme could only feasibly be progressed if sufficient suitable sites were immediately available, and that in the absence of suitable sites, the programme was not viable.<sup>1</sup>

<sup>1</sup> This was set out in a paper submitted to the Cabinet Committee on Accommodation and Supports for Ukrainian Refugees, chaired by the Taoiseach.

- 5.31** The programme commenced without a set of suitable sites having been identified.<sup>1</sup> The memorandum for Government in June 2022 (when the pilot programme was approved) identified 20 potential site locations across 13 counties; and noted that site inspections were underway to ensure there were no technical impediments to their use for the modular units. Ultimately, only six of those sites formed part of the programme — three sites provided by the OPW, and three by local authorities. The OPW stated that the sites it provided, which were originally part of the public service decentralisation programme, were close to all local services and available for use.
- 5.32** The main programme contract, signed in October 2022, did not specify the number and location of sites because they had not been confirmed at that point. The contract noted that the contracted works might be rolled out across fewer or more sites than had been discussed by the parties to the contract.
- 5.33** By December 2022, while site development work had commenced at five sites (to accommodate approximately 200 units), sites for 400/500 units were still needed.<sup>2</sup> In a briefing note to DCEDIY in January 2023, the OPW noted that it had considered 73 sites, of which 57 (78%) had proved to be unsuitable mainly due to: flooding risk; restricted site access; lack of adjacent power or water supply; and lack of drainage infrastructure.<sup>3,4</sup> It also noted that sites needed to be viable and of a high standard to progress the programme. DCEDIY stated that many of the sites were sub-optimal, requiring significant remedial work or were too small.
- 5.34** By February 2023 (the original targeted completion date), there was still a shortfall of suitable sites to accommodate approximately 250 units. The final site, which will now provide 82 units and brings the total number of units to the current target of 654, was not confirmed until March 2024.

#### *Storage of units*

- 5.35** The potential need to store some of the manufactured modular units pending site availability/readiness was recognised at the outset of the programme. The OPW stated that processes were in place to ensure there was no unnecessary stock pile of units, which included the use of a tracker to manage the co-ordination between site availability and unit production.
- 5.36** The examination team noted, from a review of minutes of meetings, that around 100 units were in storage at the start of October 2023 and that this was expected to rise to 181 by the end of 2023.<sup>5</sup> It was noted that some units were being stored at the main contractor's premises at no extra cost while others were being stored at the manufacturers' yards.
- 5.37** At mid-December 2023, 34 units were in storage, 12 of which were being stored by the main contractor. Total claims for payment for storage, to June 2024, amounted to around €620,000, of which €310,000 (50%) had been paid at that time. Payment of the remainder is subject to final account discussion. The OPW stated that the storage costs incurred were due to unforeseen circumstances — the withdrawal of two sites and extensive archaeological finds on one site.

<sup>1</sup> The OPW stated that the three OPW sites used in the programme were identified in July 2022.

<sup>2</sup> Minutes of meeting between the OPW and DCEDIY 13 December 2022.

<sup>3</sup> This was based on a list of sites provided by DHLGH and other state agencies for potential inclusion in the programme.

<sup>4</sup> *Capital Investment and Costing Update* for DCEDIY.

<sup>5</sup> Weekly meetings are held between the OPW and DCEDIY.

#### *Long-term use of the modular units*

- 5.38** An agreed long-term use for the modular units was seen as key to the programme representing value for money.

- 5.39** While DCEDIY identified several possible uses for the units post their need for Ukrainian BOTPs, no specific long-term use was agreed. DCEDIY noted that in the event that the units were not required to meet a continuing public housing need, they would retain a market value which could be realised on the open market. Also, any ground works and service connections carried out on the sites would increase their value to the benefit of the Exchequer as all the sites are state-owned.
- 5.40** The Department of Public Expenditure, in its funding sanction letter to DCEDIY in November 2022, stated that it was imperative that licencing arrangements for the long-term use of the sites be agreed between the site owners and DCEDIY as a matter of urgency. The sanction was subject, *inter alia*, to licencing agreements being agreed and signed before assembly of the units commenced on sites; and a credible and comprehensive long-term use for the modular units being identified.
- 5.41** Three sites being used were sourced from the OPW, five from local authorities, and one each from the Housing Agency and the Department of Agriculture, Food and the Marine. While leases have not yet been signed for any of these sites, the site owners allowed access for construction.
- 5.42** One site (at Haywood, Clonmel) was sourced from the Health Service Executive (HSE). A three-year licence to occupy the site has been signed with the HSE, instead of a lease.<sup>1</sup> DCEDIY stated that the HSE informed it that to negotiate a lease would take a minimum of 12 months while a licence could be agreed in a shorter time frame. DCEDIY consulted with the Chief State Solicitor's Office and the OPW and agreed that the licence was the most suitable option.

1 Licence dated 7 May 2024.

2 SI 306 of 2022 giving effect to Council Directive 2001/55/EC as activated by Council Implementing Decision (EU) 2022/382 of 4 March 2022.

3 Regular planning process under the Planning and Development Act 2000.

4 DCEDIY informed the examination team that the completed units are occupied.

5 Further detail is included in [Annex 5B](#).

6 The OPW confirmed that the 'substantial completion' date is the date the property is sufficiently complete for its intended use, allowing the owner to assume possession and begin occupying the premises.

7 The OPW stated that the protests and public order incidents at the site have resulted in considerable delay for the contractor and required additional on-site security measures.

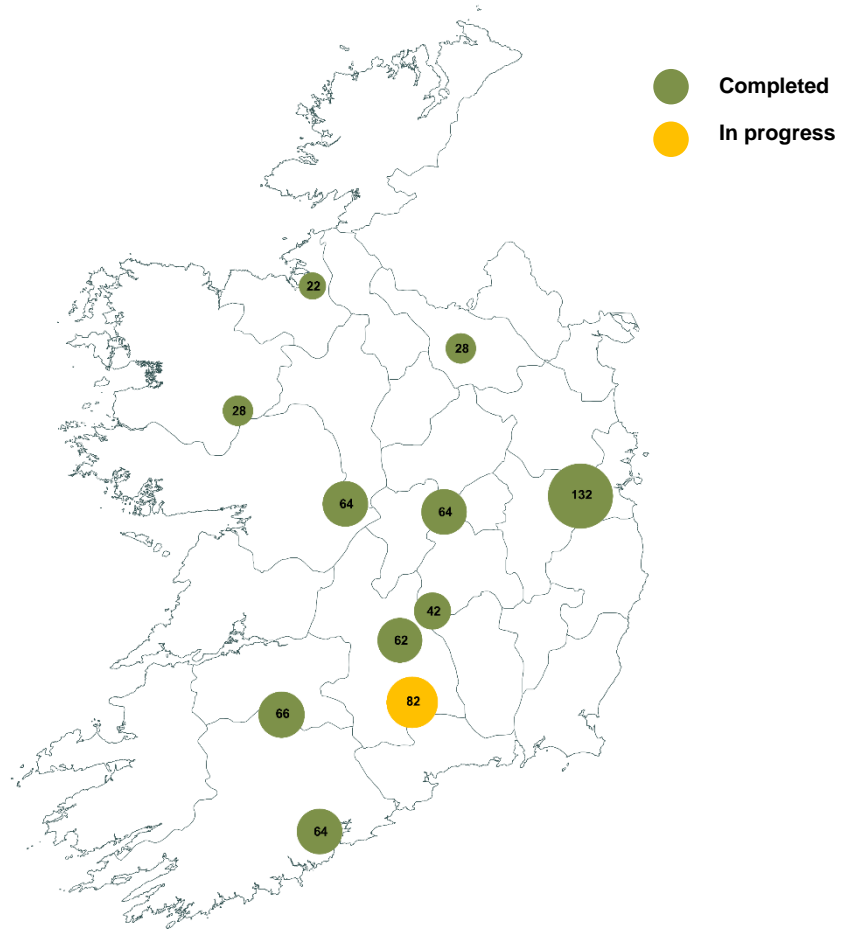
### **Planning exemptions**

- 5.43** The planning exemptions provided by the Minister for Housing, Local Government and Heritage at the outset of the programme do not cover the use of the sites beyond the period covered by the EU temporary protection directive.<sup>2</sup> The directive has been extended to March 2026, at which point the longer term use of the sites will be subject to regular planning requirements.<sup>3</sup> DCEDIY has stated that when the long-term use of the sites has been agreed by all stakeholders, it will also proceed towards full planning regularisation of the units.

### **Delivery**

- 5.44** By end August 2024, 572 (87%) of the revised plan for 654 units — providing accommodation for 2,312 beneficiaries — had been fully completed at ten sites across the country (see Figure 5.3).<sup>4,5</sup>
- 5.45** Once work on each site commenced, the time taken to completion, being the 'substantial completion' date, has been between seven to thirteen months on the ten sites completed to date.<sup>6</sup> The OPW stated that this is a significantly shorter timeframe than other housing delivery models used elsewhere.
- 5.46** Completion of the last site, which commenced in mid-May 2024, is now not expected before April 2025.<sup>7</sup>

**Figure 5.3 Location and status of modular unit sites, as at end August 2024<sup>a,b</sup>**



Source: Office of Public Works. Department of Children, Equality, Disability, Integration and Youth.

Notes: a The number of units delivered/to be delivered is included in the data point circles on the map.  
 b Further detail is available in [Annex 5B](#).

### Cost

1 At end June 2024, 64% (442) of the planned 694 units had been completed at eight sites across the country.

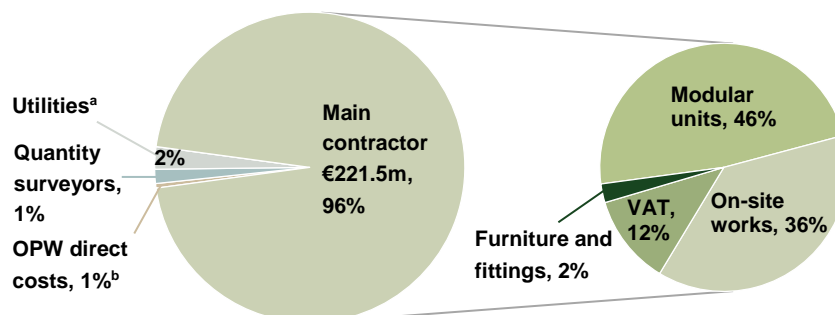
2 DCEDIY submitted the sanction request in early September 2024.

3 The main contractor then pays its design team consultants, sub-contractors and others engaged on the programme.

4 These percentages exclude VAT.

5 The OPW has stated that all cost breakdowns can be furnished on completion of the final accounts.

- 5.47** The total amount paid under the programme up to the end of June 2024 was just over €231 million (just under 98% of the approved July 2023 budget).<sup>1</sup> Additional funding approval will be required to complete the programme — while the revised projected cost in June 2024 was €285 million, DCEDIY stated that it has sought sanction from the Department of Public Expenditure for additional funding of €52.3 million based on a total programme cost of €289.3 million.<sup>2</sup>
- 5.48** The majority of the expenditure comprised payments to the main contractor under a cost reimbursable contract — 46% relates to the fabrication, delivery and installation of the modular units while on-site works account for a further 36% (see Figure 5.4).<sup>3,4</sup> The latter includes the contribution to overheads and profit fee paid to the main contractor on the programme.
- 5.49** The OPW has stated that €10.6 million in overheads and profit fee was paid to the contractor up to April 2024.<sup>5</sup> The examination team noted that the percentage fee, set out in the contract, which is calculated on a reducing scale as the construction cost increases, was not being applied as expected on a monthly basis.

**Figure 5.4 Programme spend as at 30 June 2024**

Source: Office of Public Works. Quantity surveying consultancy firm cost report as at 27 June 2024.

Notes: a Utilities comprise electricity and water contributions paid to ESB Networks and Uisce Éireann respectively.

b OPW direct costs comprise payments for legal fees and other professional services such as environmental impact assessments and topographical surveys.

- 5.50** The OPW has stated that it is fully aware of the requirement to gradually reduce the fee percentage as the value of the work increases. It stated that the correct fee percentage will only be finalised when the whole account with the main contractor is settled. It also stated that, in the meantime, retention is held and there is no commercial risk to the OPW in implementing the sliding scale fee percentage in the manner adopted.

### ***Sites withdrawn/failed to progress***

- 5.51** Costs for on-site works include around €153,500 incurred up to July 2024 in investigating sites that did not subsequently go ahead or which were withdrawn.<sup>1</sup> Further costs are expected to arise in connection with other sites that have not progressed.
- 5.52** The OPW has stated that reviews of potential sites were subject to a desktop study in the first instance and that once a site was selected, its viability for use for the programme needed to be physically assessed. It stated that, in some instances, on receipt of site investigations and surveys, selected sites were not deemed viable, and that all of this impacted programme delivery and costs.

### **Protecting the State's interests**

- 5.53** To assess the value for money of the rapid build homes, DCEDIY carried out a high level exercise comparing the expected cost of the homes with the cost of hotel accommodation — in November 2022 (when the plan was to develop 500 units), and again in August 2023 following Government approval to expand the programme to 700 units.
- 5.54** Both exercises indicated that it would take about four years before the rapid build homes would begin to deliver cost savings for the State, growing significantly thereafter (see Figure 5.5).
- 5.55** The exercise, repeated in June 2024 using the latest revised estimated cost of delivery, at that time, of €285 million (for 654 units), indicates that it will take about five years before the rapid build homes will deliver cost savings for the State.

<sup>1</sup> This amount may change, based on final account negotiations with the main contractor.

**Figure 5.5 Cost comparison of rapid build homes to hotel accommodation, November 2022 and August 2023<sup>a</sup>**

Number of years	500 units — November 2022		700 units — August 2023	
	Cost of rapid build homes <sup>b</sup>	Cost of hotel accommodation <sup>c</sup>	Cost of rapid build homes <sup>d</sup>	Cost of hotel accommodation <sup>c</sup>
	€m	€m	€m	€m
3	133.8	131.4	246.4	199.3
4	135.0	175.2	249.4	265.7
5	136.3	219.0	252.4	332.1
10	142.5	438.0	267.4	664.3

Source: Department of Children, Equality, Disability, Integration and Youth

- Notes:
- a Increases due to inflation have not been taken into account.
  - b Based on an estimated delivery cost of €130 million with an annual current expenditure outlay of €1.25 million for the management and maintenance of the units. DCEDIY has confirmed that the estimated delivery cost of €130 million was understated in error; an amount of €140 million should have been used. This does not impact on the overall conclusion from the exercise.
  - c An average rate of €60 per night was used in November 2022 and €65 per night in August 2023.
  - d Based on an estimated delivery cost of €237.4 million, with an annual current expenditure outlay of €3 million for the management and maintenance of the units. The €3 million takes into account that people living in the rapid build homes will be paying a contribution.

1 This was set out in an update report on programme costs.

2 The amounts represented here reflect the construction costs (excluding VAT) only and therefore are not on a full cost basis.

3 The analysis took into account a number of factors, for example, mains and site works; timelines; contractor type, etc.

4 The analysis was repeated in June 2024 using updated data. At that time, the construction costs per unit for the social housing projects were €267,000 and €395,000 respectively, compared with €325,600 for the rapid build housing project.

5 The [Real Cost of New Housing Delivery 2023](#), published December 2023.

6 The cost of the rapid build housing was approximately €20,000 per unit less than the average house building cost for the 'Greater Dublin Area'.

7 The amounts represented are therefore not on a full cost basis.

### Cost benefit analysis

**5.56** The *Public Spending Code* requires that a cost benefit analysis is undertaken at the preliminary business case stage of the project lifecycle. In January 2024, the OPW set out in a report to DCEDIY that, given the urgency and unusual nature of the rapid build programme, a cost benefit analysis at the time of approval would have been challenging.<sup>1</sup> DCEDIY also stated that considerable engagement and assessment of options was undertaken by the OPW with the construction sector and that costs are subject to regular review by externally sourced quantity surveyor services.

**5.57** The OPW report included a cost benefit analysis comparing the budgeted construction costs for the rapid build programme with the costs of two social housing projects. The comparison showed that the construction costs per unit for the social housing projects were €267,000 and €383,000 respectively compared with €311,000 for the rapid build housing project.<sup>2</sup> While the report included little commentary on the analysis, it noted the abnormal site works' costs for the programme by comparison with the social housing projects.<sup>3</sup> However, in overall terms, it is not clear from the report if the projects are actually comparable e.g. in terms of area, layout, facilities, etc.<sup>4</sup>

**5.58** A comparison by the OPW in June 2024 of the average cost to build a new home in Ireland with the average unit cost of the rapid build housing, identified that the rapid build housing was approximately €8,000 more costly per unit than the equivalent cost set out in a report by the Society of Chartered Surveyors Ireland (SCSI) in 2023 (€278,000 compared to an average of €270,000).<sup>5,6</sup> This was after adjustment for inflation and the normalisation of costs for comparative purposes.<sup>7</sup> The cost per square metre of the rapid build housing was estimated to be 87% higher than the equivalent cost in the SCSI report.

- 5.59** The OPW has stated that the rapid build modular construction is not comparable to other schemes and that due to the emergency nature of the project, works needed to progress on sites that were less than optimal, giving rise to additional costs, as compared to what a developer would consider for a housing scheme. It also stated that as this is a pilot scheme for a project of this nature, comparison is difficult.

### **Contracting arrangements for the rapid build programme**

- 5.60** The OPW entered into a *NEC4 Option E* (cost reimbursable) contract with John Sisk and Son (Holdings) Limited (Sisk) in October 2022. This form of contract is considered to suit projects where the scope cannot be adequately defined at the outset, such as for urgent or emergency works, and the client is prepared to carry most of the financial risk. In general, the procurement process adopted was compliant with public procurement guidelines.

1 The CWMF provides an integrated set of contractual provisions, guidance material and technical templates and procedures to assist contracting authorities in meeting their ongoing procurement requirements. It covers all aspects of the delivery process of a public works project from inception to final project delivery and review.

- 5.61** Under the *NEC4 Option E* contract, the contractor is reimbursed for the costs incurred in carrying out the works, plus an additional fee for overheads and profit. The overhead and profit percentages were fixed in the contract, and included a reducing scale as the value of the contract increased.

2 The CWMF suite of contracts does not have a cost reimbursable contract and therefore was deemed not suitable for use.

- 5.62** The OPW stated that the *NEC4 Option E* contract was considered to be the most suitable form of contract, given the multiple site locations, most of which were unknown at the commencement of the programme and the advantages it afforded which are not available under the Capital Works Management Framework (CWMF).<sup>1,2</sup> It stated that the contract facilitates a collaborative, incremental approach which was required as, due to the emergency nature of the project, the sites, design and scope of works were not known at the outset of the contract. However, a main contractor was required to engage the modular manufacturers and other construction expertise to deliver the project.

3 The OPW stated that the QS has specialised knowledge and experience in *NEC4* contracts.

- 5.63** Under the cost reimbursable contract, the State effectively carries all the programme risk. Therefore, tight monitoring and oversight, and strong cost control measures are required to protect the State's interest. The OPW is managing the programme using an in-house team of construction professionals supported by an external quantity surveying consultancy firm (QS) whose key responsibility is to manage and control costs.<sup>3</sup> Around €3.4 million (inclusive of VAT) has been paid to the QS up to the end of June 2024.

4 The contract includes a commercial summary document which provides the basis to commercially manage the programme costs.

- 5.64** Measures introduced by the QS to ensure the most cost-effective approach was adhered to and to maximise value to the State included the following.<sup>4</sup>

5 Value engineering is a systematic approach to minimising the cost of products, services, or projects while maintaining their intended functionalities and quality.

- A competitive tender competition between eight suppliers for the provision of the modular units, which resulted in five successful modular suppliers being selected to supply the units.
- Sisk, in conjunction with the OPW and the QS, undertook a value engineering exercise before the supply cost per unit was fixed for each of the manufacturers in a best and final offer process.<sup>5</sup> The average cost for a single-storey unit was just under €147,000.<sup>6</sup> The average for the two-storey units was €300,000 inclusive of delivery and installation costs.<sup>7</sup>
- Fixed hourly rates for main contractor central staff and site-based staff as well as the mark-up percentages on equipment, plant and materials.
- An indicative resource loader to plan and forecast main contractor costs.

6 This figure does not include delivery and installation costs of €6,875. Neither does it include additional costs arising from design changes currently estimated at €7,845 per unit. This cost is expected to increase as not all costs have yet been finalised.

7 There were no design changes associated with the two-storey units.

- Requirements for the substantiation of costs which included timesheets, orders, invoices, contracts, etc. A protocol for the submission of timesheets by the main contractor's design team was employed so that the timesheets could be adequately assessed and monitored.

**5.65** Other oversight and control measures included, *inter alia*,

- use of bulk purchasing to avail of discounted market rates
- visits to the modular manufacturer premises to ensure quality and to monitor progress — the quantum of completed works and materials in storage were assessed as part of the monthly payment assessments to avoid overpayment<sup>1</sup>
- weekly site visits by the QS which involved checking timesheets, headcount, progress, etc.

*Collateral warranties*

**5.66** A collateral warranty creates a contractual liability between parties who are not directly involved in the primary contract of a construction project. It covers certain terms in the underlying contract such as the quality of work, the insurance policy, copyright and duration of the warranty.

**5.67** The contract requires that collateral warranties in favour of the OPW are executed by each contractor and consultant engaged by Sisk, before the sub-contractor or consultant begins any work. The contractor is not entitled to apply for any payments until such collateral warranties are provided.

**5.68** Collateral warranties are also required from Sisk and any sub-contractors or consultants in favour of programme beneficiaries (e.g. DCEDIY, DHLGH, site owners).

**5.69** The examination team found that collateral warranties have not yet been put in place. Nevertheless, over €231 million had been paid by end June 2024. The OPW stated that it was not practical to implement the collateral warranty provisions on this project, as the scope of works is determined as the programme progresses. It stated that there are over 100 collateral warranties involved and arrangements are in place with the main contractor for all warranties to be signed by the relevant parties and that these will be in place prior to completion of the programme.

*Sustainability considerations*

**5.70** Central government departments/offices are required to consider the inclusion of green criteria in their procurements.<sup>2</sup> While the examination team found no specific reference to green criteria in the tender documentation or in the signed contract with the main contractor, the units were designed to achieve a high energy efficiency rating and a life of 60 years; and are factory manufactured off-site contributing to a greener/sustainable environment.

**5.71** Despite plans to achieve an A2 building energy rating (BER), the modular units have achieved only a C1 BER. The OPW stated that the single-storey units will achieve the A2 BER once photovoltaic (PV) panels, commonly known as solar panels, are installed.

<sup>1</sup> Visits were undertaken by Sisk, the OPW and the QS.

<sup>2</sup> [Circular 20/2019: Promoting the use of environmental and social considerations in public procurement](#) promotes green public procurement in the context of wider commitments under the Government's *Climate Action Plan 2019*.

- 5.72** In June 2024, the OPW noted that the estimated cost to bring the single-storey units up to an A2 BER standard was approximately €5,300 per unit (excluding VAT and main contractor management costs). While this was not included in the June 2024 €285 million programme estimate, DCEDIY stated that sanction for additional funding (as part of an overall funding request) has been sought from the Department of Public Expenditure to achieve an A2 BER across the full programme.

### Feasibility of the pilot programme as a delivery mechanism

- 5.73** The programme started out as a pilot proof of concept programme in June 2022 involving the implementation of 500 modular homes. Experience during the pilot was expected to provide an important evidence base for future decisions on the potential further use of modular units.
- 5.74** DCEDIY has noted that the modular units offer the potential to deal with a range of other public housing needs, for example, international protection accommodation, homeless services, student accommodation, etc. DCEDIY informed the examination team in September 2024, that it has commenced a focused policy assessment of the modular housing programme and its longer term impact.<sup>1</sup>
- 5.75** The OPW has stated that an assessment of the success or feasibility of the pilot programme process as a delivery mechanism for future use has not yet been carried out as the programme is still ongoing.

### Conclusions and recommendations

- 5.76** The rapid build housing programme was developed as a pilot 'proof of concept' programme as part of Government's response to provide accommodation for a large and sudden influx of beneficiaries of temporary protection (BOTPs). Government approved the pilot programme in June 2022, which envisaged the delivery of 500 modular units, to accommodate 2,000 BOTPs, by February 2023 at an estimated cost of €100 million.
- 5.77** The pilot proof of concept proposal prepared by OPW in May 2022 cautioned that the modular homes programme should only be progressed if sufficient suitable sites were immediately available and signalled that in the absence of suitable sites, the programme was not viable. Challenges were experienced in identifying suitable sites for the modular units, and this delayed the delivery of the accommodation.
- 5.78** By January 2023, the OPW had considered over 70 sites, of which around three-quarters were found to be unsuitable for a variety of reasons. The final site required for the programme was only confirmed in March 2024. The programme would have benefited from sites of a higher standard being identified and made available to the OPW earlier in the process.
- 5.79** One of the conditions of the Department of Public Expenditure's November 2022 funding sanction was that DCEDIY should agree and sign licencing agreements before construction of the units on sites commenced. While a licence was put in place for one site in May 2024, leases for the remaining ten sites belonging to five local authorities, the OPW, the Housing Agency and the Department of Agriculture, Food and the Marine have yet to be signed.

<sup>1</sup> The assessment is being undertaken by the Department's research and evaluation unit.

**Recommendation 5.1**

Leases for the sites on which the modular units have been developed should be agreed and signed as soon as possible.

**DCEDIY Accounting Officer's response**

Agreed

Lease agreements were not signed on sites prior to construction commencing. This is standard practice in the property sector. Heads of terms and leases for up to five years, with an option to extend, have been agreed on ten of the sites. The majority of the leases will be formally signed off on in the coming months. A licence is in place for three years for the final site at Haywood, Clonmel. DCEDIY is engaging with the HSE on options to purchase or lease the site after that point.

**Timeline for implementation**

End Q4 2024 for all sites other than Haywood, Clonmel. The Clonmel site will be regularised in Q1 2025.

**5.80** A credible and long-term use for the modular units was seen as key to the programme representing value for money. While DCEDIY identified several possible uses for the units post their need for Ukrainian BOTPs, no specific long-term use has yet been determined.

**5.81** The Minister for Housing, Local Government and Heritage provided planning exemptions to enable the speedy delivery of the programme. The longer term use of the sites beyond the period covered by the EU temporary protection directive is subject to normal planning requirements. The directive was recently extended to March 2026. There is a risk to the significant capital investment under the programme if planning is not permitted, exempted or otherwise regularised by the expiry date.

**Recommendation 5.2**

A plan for the long-term use of the units should be developed and agreed. Timely action should be taken to ensure that planning permission for the sites is obtained prior to the expiry of the EU temporary protection directive.

**DCEDIY Accounting Officer's response**

Agreed

DCEDIY has commenced a multi-stakeholder process to determine the long-term strategy for the sites, post expiry of the temporary protection directive. When the long-term use of the sites has been agreed by all stakeholders, DCEDIY will proceed towards full planning regularisation of the units.

**Timeline for implementation**

This process will be completed for all sites in Q2 2025 and planning regularisation will be pursued in tandem, to be finalised by end 2025.

**5.82** The *Public Spending Code* in place at the time of Government's approval of the programme required, for all major projects costing more than €100 million, the preparation of a strategic assessment report; and preliminary and final business case reports. Independent, external assessments at key decision points were also required. None of the foregoing were carried out, despite compliance with the *Public Spending Code* being a stipulation of the Department of Public Expenditure's funding sanction.

**5.83** Similarly, while cost comparisons were carried out during the course of the programme, a cost benefit analysis in compliance with the *Public Spending Code* was not carried out. The construction cost comparison with two social housing projects was not undertaken until January 2024, at which point seven sites (310 units) had been delivered.

**5.84** The total amount paid under the programme up to the end of June 2024 was just over €231 million (just under 98% of the approved July 2023 budget). The revised projected cost to complete the programme at June 2024 was €285 million. DCEDIY has sought sanction from the Department of Public Expenditure for additional funding to complete the programme, which is now expected to cost €289.3 million.

### ***Programme delivery***

**5.85** The delivery of the first 500 units by end February 2023 was considered to be an ambitious, but achievable timeframe at the outset of the programme. However, delivery of 500 units was only achieved in early August 2024 — some 17 months later than planned.

**5.86** In addition to the delays in delivery, significant project cost overruns have occurred. The initial projected cost was an estimated €200,000 per residential unit, increasing to an average projected cost per unit of around €436,000 by June 2024 — an increase of almost 120%. DCEDIY's latest total programme cost projections of €289.3 million, indicate a final projected average cost per unit of around €442,000.

**5.87** A significant factor impacting the cost outturn and the timelines was the lack of availability of suitable sites and insufficient provision for the cost of site preparation works. The lack of a definitive schedule of sites at the outset added considerably to the cost and timeframe of the programme, including the need to hold some units in storage. The prolongation of the work has also exposed the programme to high construction cost inflation over a longer time period than originally costed.

**5.88** Up to June 2024, storage costs of around €310,000 had been paid. However, this expense is expected to increase as some storage costs have yet to be agreed.

### ***Contracting arrangements***

**5.89** The OPW contracted with the main contractor to deliver the programme using a *NEC4 Option E* (cost reimbursable) contract, whereby the State bears most of the project risk.

**5.90** Certain limited protections for the State's interest that were included in the contract — in particular agreement of collateral warranties — were not implemented as intended.

### ***Assessment of delivery model***

**5.91** The pilot proof of concept proposal document envisaged that the programme would be assessed after the first 500 units had been installed to assess its feasibility. This has not yet occurred.

**5.92** Government departments and offices are required to consider the inclusion of green criteria in their procurements. There was no specific reference to green criteria/sustainability requirements in the tender documentation or in the signed contract with the main contractor.

**Recommendation 5.3**

An assessment of the feasibility of the rapid build process as a delivery mechanism for future use should be carried out in a timely manner on completion of the programme. The key lessons learned from the process including any recommendations in relation to when to use/not use the *NEC4 Option E* (cost reimbursable) contract should be developed and disseminated within the public sector.

**OPW Accounting Officer's response**

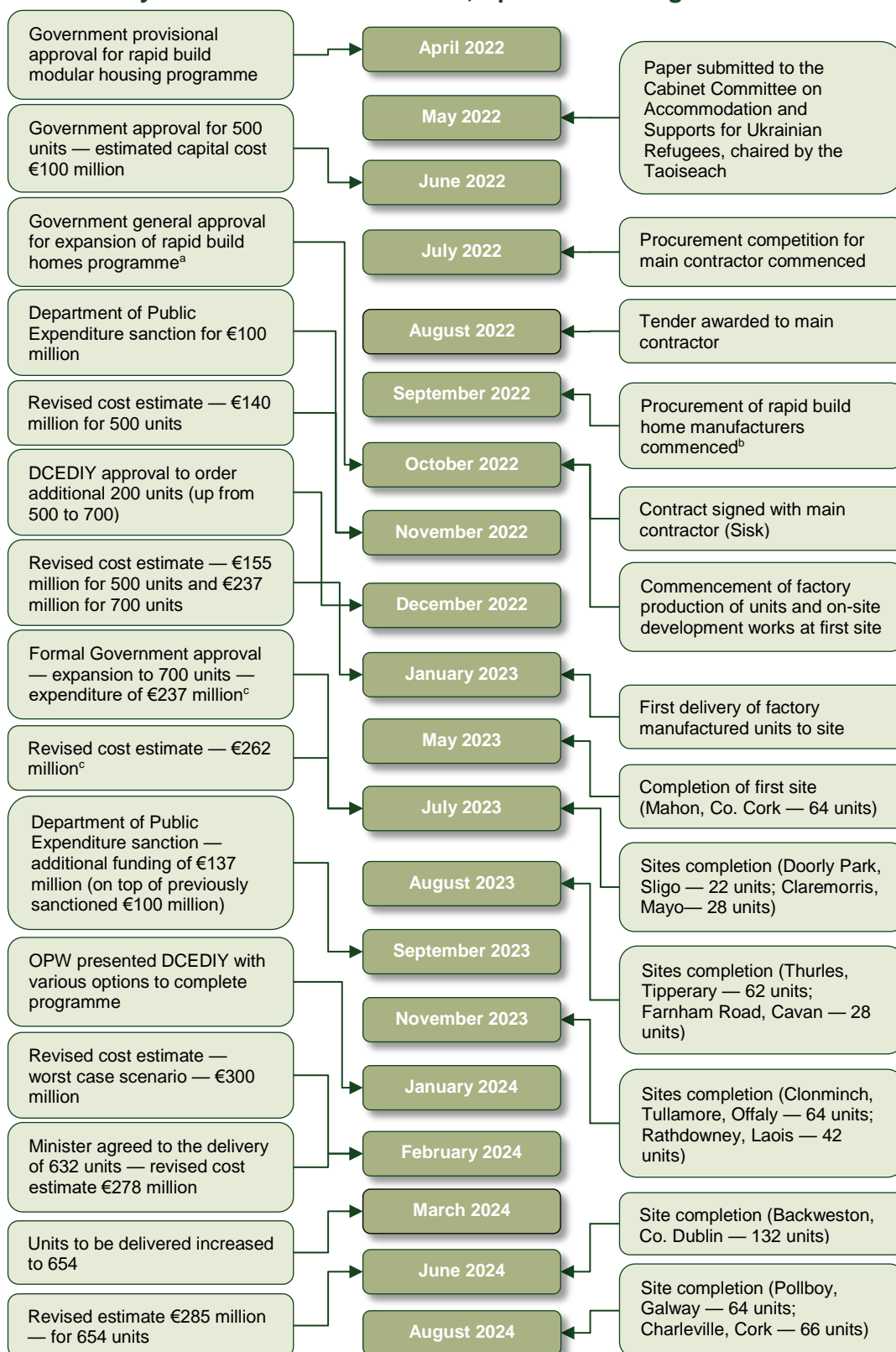
An assessment of the delivery mechanism will be carried out in a timely manner on completion of the programme and will include consideration of all the various factors involved in its delivery. The use of the *NEC4 Option E* (cost reimbursable) contract in this instance will be assessed in the context of this exercise. Any lessons learned will be shared with the Office of Government Procurement.

**Timeline for implementation**

On completion of the programme.

- 5.93** Despite plans to achieve an energy efficient A2 BER, the modular units have achieved only a C1 rating. This has a potential bearing on any cost comparisons carried out with other forms of housing delivery.
- 5.94** In June 2024, the OPW noted that the estimated cost to bring the single-storey units up to an A2 BER standard was approximately €5,300 per unit (excluding VAT and main contractor management costs) which had not been included in the June 2024 €285 million programme estimate. DCEDIY has since sought additional funding from the Department of Public Expenditure to achieve an A2 BER across the full programme.

### Annex 5A Key decision dates and events, April 2022 to August 2024



Source: Office of Public Works. Analysis by the Office of the Comptroller and Auditor General.

- Notes:
- a Government decision S180/20/10/2271A. The approval was non-specific.
  - b The procurement was undertaken by Sisk in conjunction with a professional firm of quantity surveyors, contracted by the OPW in July 2022, to provide quantity surveying and cost management services for the programme.
  - c Government decision S180/20/10/2533C. At the time of Government approval for €237 million in July 2023, the estimated cost of delivery had increased to €262 million.

**Annex 5B Summary information, including status of modular unit sites, as at end August 2024**

Ref	Site location	Date Commenced <sup>a</sup>	Site owner <sup>b</sup>	Units	Persons	Status	Date completed/ target date <sup>c</sup>	Months to complete <sup>d</sup>
1	Mahon, Cork City	25 Oct 22	Cork City Council	64	256	●	31 May 23	7
2	Farnham Road, Cavan	24 Nov 22	OPW	28	112	●	25 Aug 23	9
3	Thurles, Tipperary	14 Dec 22	OPW	62	248	●	16 Aug 23	8
4	Doorly Park, Sligo	16 Dec 22	Sligo Co. Co.	22	88	●	7 July 23	7
5	Claremorris, Mayo	16 Dec 22	OPW	28	112	●	26 July 23	7
6	Clonminch, Tullamore, Offaly	11 Jan 23	Offaly Co. Co.	64	256	●	21 Nov 23	10
7	Rathdowney, Laois	12 Apr 23	Housing Agency	42	168	●	21 Nov 23	7
8	Backweston, Co. Dublin	10 July 23	Department of Agriculture	132	552	●	28 June 24	11
9	Charleville, Co. Cork	17 July 23	Cork Co. Co.	66	264	●	21 Aug 24	13
10	Pollboy, Ballinasloe, Co. Galway	13 Nov 23	Galway Co. Co.	64	256	●	9 Aug 24	9
11	Haywood, Clonmel, Co. Tipperary	15 May 24	HSE	82	328	●	Apr 25	
Total				<b>654</b>	<b>2,640</b>			

**Completed****In progress**

Source: Office of Public Works. Department of Children, Equality, Disability, Integration and Youth.

- Notes:
- a This is the date that site works commenced. The sites are listed in date commenced order.
  - b Co. Co. refers to County Council.
  - c Date completed reflects the 'substantial completion' date.
  - d This is the difference between 'date commenced' and 'date completed'.