



Ministry
of Justice

HMP Liverpool Major Refurbishment Project – Process Evaluation and Economic Review

**Lucy Strang, Harley Williamson, Catherine Galley, Mehdi Shiva, Katie
Passey**

RAND Europe

Ministry of Justice Analytical Series

July 2026



Data and Analysis exists to improve policy making, decision taking and practice by the Ministry of Justice. It does this by providing robust, timely and relevant data and advice drawn from research and analysis undertaken by the department's analysts and by the wider research community.

Disclaimer

The views expressed are those of the authors and are not necessarily shared by the Ministry of Justice (nor do they represent Government policy).

First published 2026



© Crown copyright 2026

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

Any enquiries regarding this publication should be sent to us at researchsupport@justice.gov.uk

This publication is available for download at <http://www.justice.gov.uk/publications/research-and-analysis/moj>

ISBN 978-1-911763-39-0

Acknowledgements

We would like to thank the programme team and the designated contacts at each prison, whose cooperation and assistance were crucial in facilitating access and coordinating the logistics of our fieldwork. We also thank all research participants for sharing their time and insight, which have formed the foundation of this research.

Contents

1. Executive summary	1
1.1 Background and Rationale	1
1.2 Key Findings	2
1.2.1 Process Evaluation	2
1.2.2 Economic Review	4
1.3 Lessons Learnt	6
2. Background and context	8
2.1 Background	8
2.2 Study Aims	9
2.3 About This Report	10
3. Methods	11
3.1 Design	11
3.2 Process Evaluation	11
3.3 Economic Review	12
3.4 Limitations	13
4. Refurbishment Plans and Progress	15
4.1 Refurbishment Priorities and Initial Plans	15
4.2 Delivery of the Refurbishment to Date	16
5. Challenges in the Delivery and Implementation of Refurbishment	17
5.1 Consultation during Refurbishment Planning	18
5.2 Communication during Refurbishment Delivery	19
5.3 Misalignments between Refurbishment Plans and Prison Needs	20
5.4 Security Challenges Associated with the Refurbishment	21
5.5 Feelings of (Un)Safety amongst Staff and Prisoners	23
5.6 Spaces for Relationship Building and Community Forming	24
5.7 Prisoner Accessibility	26
5.8 Quality of Staff Facilities	27
6. Perceived and Potential Benefits of the Refurbishment	28
6.1 Effective Management of the Prison	28
6.2 Improving Living and Working Conditions in the Prison	29
6.3 Supporting prisoners' unmet needs	31
6.4 Improvements to Security	32
7. Trade-offs and Unintended Consequences of the Refurbishment	33

7.1	Safety and Security Changes	33
7.2	The Effect of Improved Light on Sleep	36
8.	Findings from the Economic Review	37
8.1	Overview of relationships between refurbishment relevant factors and outcomes	38
8.2	Factors affecting health and wellbeing	40
8.3	Factors affecting levels of violence	44
8.4	Factors affecting levels of prisoner misconduct	48
8.5	Factors affecting feelings of safety	52
8.6	Factors affecting the relationships between prisoners and staff	53
9.	Conclusions and Lessons Learnt	56
9.1	Conclusions	56
9.2	Lessons Learnt	58
	References	61
	Annex A: Theory of Change	67
	Annex B: Research Questions	70
	Annex C: Additional Detail on Research Methods	72

List of tables

Table 1: Factors and outcomes identified by prisoners at HMP Liverpool	5
Table 2: Illustrative Monetisation of Relevant Health and Wellbeing Outcomes	43
Table 3: Illustrative Monetisation of Relevant Violence Outcomes	46
Table 4: Monetisation of Relevant Misconduct Outcomes	50
Table 5: Study participants	73
Table 6: Targeted Literature Review Inclusion and Exclusion Criteria	83

List of figures

Figure 1. Relationships between factors relating to refurbishment and prisoner outcomes from the targeted literature review	39
Figure 2: Theory of Change logic model	67
Figure 3. Targeted Literature Review Methodology	76
Figure 4. Relationship between factors and health and wellbeing outcome	79
Figure 5. Relationship between factors and violence	80
Figure 6. Relationship between factors and misconduct.....	80
Figure 7. Relationship between factors and relationships with staff.....	81
Figure 8. Relationship between factors and feelings of safety	82

Glossary

HMP	His Majesty's Prison
HMIP	His Majesty's Inspectorate of Prisons
HMPPS	His Majesty's Prison and Probation Service
MoJ	Ministry of Justice
PCoSO	People Convicted of a Sexual Offence
PCSP	Prison Capacity Sub-Portfolio
QA	Quality Assurance
SLT	Senior Leadership Team
ToC	Theory of Change

1. Executive summary

1.1 Background and Rationale

The prison estate has been under sustained pressure for over a decade. At one point in 2024, there were fewer than 100 available spaces in the adult male estate.¹ As part of a package of measures to meet current and future demand, the Ministry of Justice (MoJ) and His Majesty's Prison and Probation Service (HMPPS) are aiming to create 20,000 new prison places by building new and expanding existing prisons (Beard, 2023). This includes the refurbishment of several prisons, including HMP Liverpool. In the 10-Year Prison Capacity Strategy, published December 2024² the government committed to delivering the remaining 14,000 places across the 20,000 prison place programme.

The main driver for the refurbishments as part of the 20,000 prison places programme was to deliver additional capacity (by bringing places back into use) and safeguard existing capacity to meet rising demand. The aim is to bring relevant accommodation up to current technical standards, supporting the outcomes of providing decent and safe prison environments that are conducive to reducing reoffending, within the limitations of existing estate/older buildings.

The refurbishment at HMP Liverpool aims to return 350 out-of-use cells to operational status, upgrade 800 cells that were deemed to be of poor quality and construct a new workshop to provide vocational training opportunities for prisoners.³ To date, three wings have been refurbished (429 cells).

RAND Europe has been commissioned by MoJ to conduct an evaluation comprised of two components:

¹ [Ministry of Justice – Annual Statement on Prison Capacity: 2025](#)

² [10-year Prison Capacity Strategy - GOV.UK](#)

³ While this was correct at the time of the research there has since been a formal scope change to 381 new places. Overall capacity will now be 1,181.

- Firstly, a process evaluation of the delivery and implementation of the refurbishment project at HMP Liverpool; and,
- Secondly, an economic review that aimed to strengthen the evidence base on the potential benefits of prison refurbishment and to test and validate the relevance and existence of key benefits at HMP Liverpool.

The process evaluation drew on 38 interviews and 6 focus groups with prison leadership, staff, prisoners and MoJ stakeholders; observational data; and a prisoner survey, all conducted between March and April 2025. The economic review drew on a targeted literature review and the qualitative data from HMP Liverpool. It does not include any quantitative evidence on costs and monetised impacts of the specific refurbishment at HMP Liverpool because this was not possible within the limited scope of the study, which did not include an impact evaluation.

1.2 Key Findings

1.2.1 Process Evaluation

Extent of the refurbishment to date

- The refurbishment plans included: bringing cells back online, conversion of some double cells into single; adding 200 workshop spaces; enhancing the cleanliness, brightness and sanitation of wings; improving security features, accessibility, plumbing and ventilation; and installing larger and more secure windows.
- At the time of fieldwork, H, I and K Wings had been fully refurbished (429 cells in total, including 96 cells on H Wing and 95 on I Wing which are an uplift in places at the prison). The refurbishment of G Wing was in delivery when the contractor went into administration and construction was paused in September 2024. The completion of G Wing is therefore outstanding. This and the rest of the refurbishment will therefore be completed later than planned.
- Delivered works in the refurbished wings include: information technology kiosks on wings,⁴ new single cells, new doors, larger and more secure windows, wooden

⁴ These enable prisoners to carry out administrative tasks online.

furniture in line with current technical standards, electricity sockets and toilets, damp remediation, fire safety improvements, basic redecoration and improved lighting and ventilation.

Prisoner benefits of the refurbishment

- Prisoners in refurbished cells spoke favourably of their cleanliness, comfort and privacy, although some felt that the built-in furniture limited personalisation.
- Prisoners also noted that the new windows increased brightness in their cells, although some complained this made it more difficult to sleep.
- Prisoners were reported to spend most of their time in their cells. However, some staff reported that the brightness and cleanliness of refurbished areas were encouraging some prisoners on those wings to leave their cells and socialise.
- Staff highlighted some accessibility improvements for prisoners with mobility needs and noted that the reduction in visual clutter and other stimuli in refurbished wings was beneficial for neurodiverse prisoners.
- Prisoners in refurbished wings described small but meaningful improvements to their wellbeing as a result of the refurbishment.

Staff benefits of the refurbishment

- Several aspects of the refurbishment delivered to date were seen by some staff and senior leadership team (SLT) members as supporting more effective day-to-day prison management.
- The creation of more single cells was welcomed. Retention of some double-occupancy cells was also valued, particularly for those with mental health needs or who preferred shared accommodation.
- Built-in furniture and standardised cell layouts were seen as a practical improvement by staff, supporting quicker checks and reducing concealment risks.
- Staff noted that the brighter, more modern environment supported the maintenance of decent conditions and contributed to staff morale.
- Staff expressed some dissatisfaction with the size, location and condition of staff facilities and the quality of some of the refurbishment delivered in the showers.

- Staff expressed concerns about potential security challenges resulting from the refurbishment, particularly in H wing, the first to be refurbished: netting installed to prevent falls was felt to reduce natural light and new railings and metalwork were reported to obstruct sightlines and hearing, despite being installed in line with technical specifications. This was a lesson learnt, and sightline issues were addressed in subsequent work in I and K Wings.

Facilitators and challenges within the refurbishment

- SLT and staff spoke highly of how logistical and security challenges related to refurbishment delivery were managed by the prison and particularly praised the efforts of staff to address issues with the operational readiness of K Wing when it was reopened.
- Staff and SLT reflected on areas for improvement around consultation and communication between the prison, the contractor and MoJ during the refurbishment planning, delivery and implementation.
- Communication issues were reported to result in some discrepancies between refurbishment plans and the prison's operational needs, and in the handing over of K Wing before it was felt by some SLT and staff to be fully ready.
- The refurbishment of G Wing was underway when works stopped and the wing had remained closed as a result. An enclosed walkway was built to mitigate the effects of this closure. Nevertheless, it had reportedly impacted movement across the prison and left some staff in F Wing feeling physically isolated and less safe.
- Staff and prisoners noted that the effectiveness of some security improvements in refurbished areas, such as the new windows and installation of window cages, was necessarily limited because they had not yet been completed across all wings.

1.2.2 Economic Review

- The economic literature review explored what benefits, at both prisoner and staff levels, are associated with prison refurbishment in the literature – specifically regarding key features such as light, cell sharing, anti-contraband measures and

increased space. It did not examine the costs and monetised outcomes of the specific refurbishment at HMP Liverpool.

- The targeted literature review and qualitative data from the HMP Liverpool process evaluation highlighted that factors such as reduced crowding and improved physical conditions may be associated with benefits - i.e. positive outcomes for the people working and living in prisons.
- These benefits include improved prisoner wellbeing, lower levels of violence and misconduct, increased feelings of safety and improved prisoner-staff relationships.
- The interviews and focus groups with prisoners at HMP Liverpool, conducted for the process evaluation, validated several pathways identified in the literature. Some of these related to the refurbishment, others the more general regime and social environment that may be relevant for future refurbishment projects. Table 1 summarises the factors and relationships that prisoners expressed during the interviews and focus groups.

Table 1: Factors and outcomes identified by prisoners at HMP Liverpool

Factor	Association
Prison's physical conditions	Positive prisoner health and wellbeing
High levels of prisoner-staff interactions	Lower levels of violence, increased feelings of safety among prisoners; better relationships between prisoners and staff
Positive prisoner-staff relationships	Lower levels of violence
Long periods of in-cell confinement	Negative prisoner health and wellbeing; higher levels of violence
Lack of purposeful activity	Negative prisoner health and wellbeing

Cell sharing	Higher levels of violence
Involvement in violence or misconduct	Lower levels of feelings of safety among prisoners

- Evidence from the targeted literature review showed the potential monetary value in improving some factors, particularly feelings of safety and boredom.
- There was very limited statistical evidence linking factors related to the refurbishment with refurbishment outcomes and so the research team could not estimate any potential monetary value for most factors. There is likely to be substantial value in improving factors such as access to purposeful activity, in-cell confinement and relationships with staff.

1.3 Lessons Learnt

- 1. Maintain and strengthen processes for consultation and communication about refurbishments:** Ensuring that SLT, staff and prisoners have opportunities to input meaningfully into refurbishment planning and delivery helps secure buy in, identify and consider the specific needs of staff and prisoners and minimise prison disruption.
- 2. Ensure accessibility improvements, adapted to the prison, are incorporated in refurbishments:** Accessibility improvements in I and K Wings went beyond technical requirements to better address the needs of staff and prisoners and mitigate security and safety concerns around obstructed sightlines. Accessibility planning should include further consideration of the specific context and requirements of each prison, including potential security and safety concerns that may result from these improvements.

3. Prioritise improvements to and, if possible, expansion of communal spaces:

While the refurbishment project at HMP Liverpool did not aim to increase social spaces, plans should prioritise improving and, if building layout and footprint allow, creating spaces for prisoners to engage meaningfully with each other, participate in purposeful activities and relax quietly. Delivering clean, pleasant and functional staff areas should also be prioritised in refurbishments.

4. Augment contingency planning to prepare for future major event such as

contractor administration: The risk of contractor administration continues to remain on project risk registers and will include replication of contingency plan that was in place as part of standard planning requirements with contractors and Professional Service Partners, learning any lessons drawn from this experience. It will also include plans for having commercial arrangements in place to be able to appoint suitably qualified teams that can deal with the issues that arise from a major contractor going into administration.

2. Background and context

2.1 Background

Background to the refurbishment project at HMP Liverpool

Prisons in England and Wales have been facing a capacity crisis, with overcrowding persistently cited as a pressing issue in many prison facilities (Ministry of Justice, 2024a). In addition, a lack of adequate space and resources, combined with deteriorating living conditions across some prisons, have hampered rehabilitation efforts by making it difficult for prisoners to access education and support programmes that could aid their reintegration into society (National Audit Office, 2020).

Alongside measures to reduce demand on the estate, the Ministry of Justice (MoJ) and HM Prison and Probation Service (HMPPS) have responded to this crisis by taking steps to increase the number of prison places and to improve prison conditions (MoJ, 2024b). This plan aims to create 20,000 new prison places through building new prisons and expanding existing prisons (Beard, 2023). It also includes plans to refurbish several Category B and C prisons, including HMP Liverpool (Category B). In the 10-Year Prison Capacity Strategy, published December 2024, the new government committed to delivering the remaining 14,000 places across the 20,000 prison place programmes.

The main driver for the refurbishments as part of the 20,000 prison places programme was to deliver additional capacity (by bringing places back into use) and safeguard existing capacity, to meet rising demand. The aim is to bring relevant accommodation up to current technical standards, supporting the outcomes of providing decent and safe prison environments that are conducive to reducing reoffending, within the limitations of existing estate/older buildings. The theory of change (see Annex A) outlines how the refurbishment at HMP Liverpool should achieve this.

Objectives of the refurbishment project at HMP Liverpool

The objectives of the refurbishment at HMP Liverpool were to return 350 out-of-use cells⁵ to operational status, upgrade 800 cells that were deemed to be of 'poor quality' and construct a new workshop to provide vocational training and purposeful activity opportunities for prisoners. These enhancements were designed to increase the prison's overall operational capacity to 1,150 prisoners, as well as alleviate overcrowding, improve safety and living conditions for prisoners and reduce staffing pressures.

On 19 September 2024, construction activity at HMP Liverpool was paused because the contractor delivering the refurbishment went into administration. At the time of reporting (July 2025), 429 cells have been completed across three wings (H, I and K), including 191 out-of-use cells which have been returned to use. Work to complete the refurbishment across the remaining five wings will complete at a later date.

2.2 Study Aims

This evaluation is comprised of two components: a process evaluation and an economic review. The process evaluation aimed to explore the delivery and implementation of the refurbishment project at HMP Liverpool, including what does and does not work well, and provide evidence for informed decision-making for both the continuation of the refurbishment project at HMP Liverpool and other refurbishment project within the wider prison estate.

The economic review aimed to strengthen the evidence base on the potential benefits of prison refurbishment and to test and validate the existence and relevance of key benefits at HMP Liverpool using interview and focus group data with prisoners and staff.⁶ The economic review also established a methodology for monetising benefits using evidence from the existing literature, though these could not be tailored to HMP Liverpool as collecting prison-specific data on the refurbishment's impacts was outside of the project's remit. The theory of change (ToC) that informed this evaluation can be found in Annex A.

⁵ This number has since been increased to 381.

⁶ While an economic review normally explores both costs and benefits, this project focused solely on benefits at MoJ's request, as their internal work is analysing the costs of the refurbishments.

The research questions for the process evaluation and the economic review can be found in Annex B.

2.3 About This Report

This report aims to provide insights to inform learning and decision-making about the ongoing refurbishment of HMP Liverpool and future prison refurbishment planning and delivery. Within this report:

- Section 3 outlines details on the methodology used in this evaluation.
- Section 4 summarises the initial refurbishment plans and the delivery and implementation of these plans to date (i.e., as of July 2025).
- Section 5 explores the perceived and potential benefits of the refurbishment.
- Section 6 overviews the facilitators and challenges in the delivery and implementation of the refurbishment plans as experienced and perceived by staff, SLT and prisoners.
- Section 7 examines the trade-offs and unintended consequences of the refurbishment as experienced and perceived by staff, SLT and prisoners.
- Section 8 presents the findings from the economic review.
- Section 9 synthesises the findings from the study and presents lessons learnt.
- Annexes: The ToC, research questions, additional details on methodology and additional survey analysis.

3. Methods

3.1 Design

For the **process evaluation**, a multi-method approach was used to provide insights into the delivery and implementation of the refurbishment project at HMP Liverpool and the views and experiences of prisoners, staff, and members of the prison's senior leadership team (SLT). Data collection was through semi-structured interviews and focus groups conducted with prisoners, prison staff, SLT and MoJ stakeholders; observations; and a survey of prisoners in HMP Liverpool. The **economic review** assessed the potential benefits associated with the refurbishment project.⁷ It used previous MoJ desk research, a targeted literature review, re-analysis of the semi-structured interviews and focus groups carried out for the process evaluation, and – where feasible – illustrative monetisation of outcomes using data from the targeted literature review.

3.2 Process Evaluation

Qualitative data collection activities were carried out during two four-day visits to HMP Liverpool in March and April 2025. In total, the research team conducted 14 interviews with prison staff, 10 interviews with prison SLT, 2 interviews with MoJ stakeholders and 12 interviews with prisoners on refurbished wings. In addition, the team conducted 4 focus groups with prisoners on refurbished wings (23 participants in total), and 2 focus groups with prisoners on not-yet-refurbished wings (11 participants.)

The two fieldworkers also conducted observations in the prison, focusing on the physical layout of the spaces and the ways in which prisoners and staff members used and interacted within them. Observations were recorded on paper using a semi-structured observation framework. Data collected through the observations was used to triangulate

⁷ To avoid duplicating work being conducted by MoJ, the economic review focused exclusively on potential benefits and did not consider costs relating to the refurbishment.

and validate data collected from the interviews and focus groups. Please see Annex C for more detail on the qualitative analysis, including the team's ethical approach.

The team developed a prisoner survey that combined a subsample of questions from the HMIP survey (HMPPS, 2022) carried out during the inspection of HMP Liverpool in 2022, combined with additional questions pertinent to the evaluation that were not otherwise covered. The survey was disseminated to a random sample of approximately 350 prisoners in HMP Liverpool by MoJ analysts.⁸ There were 73 surveys returned to the study team, a 21% response rate, entered into an excel spreadsheet and analysed. Our survey results have been used in this study to help validate, challenge or add nuance to the qualitative findings.

3.3 Economic Review

The team conducted a targeted literature review to examine recent evidence on prison design features and their impact on outcomes for prisoners and staff, with a focus on factors relevant to the refurbishment of HMP Liverpool. It aimed to identify relationships and pathways between factors and outcomes within the reviewed literature. The review built upon 19 studies previously identified by MoJ,⁹ and included studies published between 2014 and 2025. Search strings and inclusion/exclusion criteria covered priority areas such as prisoner and staff relationships, purposeful activity, and perceptions of safety (see Annex C). Searches were then conducted in three academic databases and the most relevant abstracts screened and prioritised. The team then prioritised literature relating to five key outcomes: prisoner health and wellbeing, violence, misconduct, feelings of safety and prisoner-staff relationships. This resulted in the inclusion of an additional 22 high-quality articles;¹⁰ thus, in total, 41 articles were included in the targeted literature review.

⁸ A power calculation was used to determine how many prisoners needed to be surveyed to ensure a representative and proportionate sample of prisoners from refurbished and not-yet-refurbished wings was obtained to gather sufficient data for meaningful comparisons of results.

⁹ These 19 studies were taken as given by MoJ and were not subject to further quality assessment by the research team. These studies include literature from outside the UK, Western Europe, United States, Canada, Australia and New Zealand as well as papers published before 2014.

¹⁰ The team assessed the quality of the articles they reviewed using the Critical Appraisal Skills Programme checklists.

The team used the qualitative data from HMP Liverpool process evaluation (see section 3.2) to validate which relationships within the literature were present within the prison. Please see Annex C for further detail on how the qualitative data was re-analysed for the economic review. The team systematically reviewed transcripts to identify evidence of the pathways and relationships highlighted in the literature, allowing for triangulation between published evidence and lived experience.

To link the findings with potential economic benefits in the economic review, the team conducted a monetisation exercise to estimate the potential value of a one per cent (or one level) change in a factor on relevant outcomes, where sufficient data existed. To estimate the economic benefits of refurbishment, the team extracted relevant statistics from regression tables in the literature to quantify the impact of key factors on health and wellbeing, violence and misconduct. These effects were then monetised using established valuation methods, including HM Treasury (2021) guidance and the Cost of Crime framework (Heeks et al., 2018). The team used the Consumer Price Inflation Index to adjust all values into 2024 prices to increase comparability across outcomes (Office for National Statistics, 2025). This approach provided illustrative estimates of the value of improving certain factors related to the refurbishment and provides the Ministry of Justice with a methodology it can build upon using primary data collection.

3.4 Limitations

The qualitative data presented in this report comprise **small sample sizes**, which limit representativeness and generalisability beyond the scope of the study. Furthermore, **prison management recruited the sample of interview and focus group participants**. While the researchers asked management to select interviewees who represented a range of views and experiences, it is not possible to assess the extent to which this was achieved.

The prisoner survey had a 21% response rate and was too small to be confident that it was **representative of the overall prisoner population** at HMP Liverpool. The small sample size limited opportunities for robust comparison—both within the dataset and against the 2022 HMIP survey—reducing the generalisability of findings.

The targeted literature review aimed to extend the scope of MoJ's internal literature review and provide an updated assessment of the evidence, focusing on factors relevant to the refurbishment project. **As such, it should not be considered a comprehensive review.**¹¹ Most of the studies identified were qualitative, and among the quantitative results, **not all were suitable for monetisation**: some outcomes of interest could not be monetised as there was no evidence linking the outcome to monetary values,¹² and some factors were **not included as they were not relevant** to the context of the refurbishment at HMP Liverpool.¹³ None of the relevant quantitative studies used data from England and Wales, and much of the literature was over ten years old.¹⁴ While the relevant studies used regression analysis, none employed quasi-experimental designs, which would help reduce the risk of confounding effects.

Given the limited publicly available data on unit costs and the monetary value of prisoner outcomes, the analysis **relied entirely on evidence from the general population** (such as mapping psychological distress from the General Health Questionnaire to wellbeing measured in wellbeing years, or the cost of a violent incident), which may have different characteristics and, therefore, different monetary values compared to the prison population. Finally, there was limited readily available evidence mapping outcomes to relevant unit costs and prevalence, particularly in relation to misconduct, forcing the research team to rely on proxy measures.

¹¹ The relationships and pathways identified by MoJ in their literature review are reported in the targeted literature review and were used for both the validation and monetisation exercises (where relevant).

¹² Such as the Kessler Screening Scale for emotional wellbeing, staff-prisoner relationships and perceptions of safety.

¹³ Such as prisoner characteristics (e.g., presence of a mental disorder) and prison feature (e.g., security classification).

¹⁴ Studies used for the monetisation used research from the United States and Western Europe.

4. Refurbishment Plans and Progress

This section presents information on the delivery of the refurbishment to date.

Summary

The refurbishment plans included: bringing cells back online; conversion of some double cells into single cells; adding 200 workshop spaces; enhancing the cleanliness, brightness, and sanitation of wings; damp remediation and fire safety work; improving security features; improving accessibility, plumbing and ventilation; and installing larger and more secure windows.

At the time of fieldwork, H, I and K Wings had been fully refurbished, but the refurbishment was halted in September 2024 as the contractor went into administration. The refurbishment of remaining areas has not yet been completed.

Delivered refurbishments include new doors, windows, wooden furniture, electricity sockets and toilets, basic redecoration and improved lighting and ventilation.

Safety and security measures have been updated in refurbished areas with updates to CCTV systems, ramps, handrails, netting to prevent falls and window cages to deter drone activity.

4.1 Refurbishment Priorities and Initial Plans

The refurbishment aimed to bring both previously unused and dilapidated cells back into operation to address the issue of overcrowding and inadequate living conditions (MoJ, 2022). SLT interviewees reported that by reactivating these spaces, the intention was to provide more decent conditions for prisoners that enable prison staff to better manage the prison and enhance its safety and operational efficiency.

In addition to expanding cell spaces, the refurbishment efforts also focused on improving the brightness, cleanliness, and overall decency of living conditions

within the prison. Enhancements were reported by SLT interviewees to include improving plumbing systems, resolving some issues with the supply of running water and electricity, and increasing the size and security of windows and doorways. A key focus of the refurbishment plans was to create more single occupancy cells in wings to accommodate more at-risk prisoners. SLT interviewees reported that the rationale was to further enhance prisoners' living conditions and overall safety outcomes, as staff would be managing fewer prisoners in those single cell wings.

The plans involved creating dedicated workshop spaces that offer prisoners opportunities for purposeful activities essential for skill development and reducing recidivism. Additionally, the refurbishment plans sought to enhance security measures, such as the installation of anti-drone cages, to minimise contraband entering the prison. Lastly, the plans aimed to improve accessibility by adding ramps and accessible cells, ensuring that prisoners with mobility needs can navigate the prison more effectively.

4.2 Delivery of the Refurbishment to Date

To date, three wings have been refurbished to completion: H, I and K wings. G wing was being refurbished when works stopped in September 2024. An SLT interviewee stated that the works have included upgrading doors and windows, installing wooden furniture in cells and ensuring uniformity in the layout of cells, installing new electricity sockets and separate toilets in cells, basic redecoration and improved lighting. Safety and security measures have also been updated on H, I and K wings, including new CCTV capabilities, new handrails, new netting to prevent prisoners from jumping from landings, and cages on the windows to prevent drone activity and reduce contraband entering the prison.

The refurbishment plans have not yet been fully realised across the remaining wings as the contractor went into administration. Importantly, the refurbishment of G Wing, which was partially completed, was paused and the wing subsequently closed. Staff frequently crossed G Wing to access education, the chapel, or respond to emergencies. Fieldworkers observed that an enclosed walkway had been constructed to facilitate prisoner and staff movement from the centre of the prison, providing a short-term solution to the issue.

5. Challenges in the Delivery and Implementation of Refurbishment

In this section, we explore the key challenges that were experienced and perceived by staff, SLT and prisoners during the delivery and implementation of the refurbishment.

Summary

Although project communication mechanisms were in place, staff and SLT reflected on areas for improvement in consultation and communication between the prison, the contractor and MoJ during the refurbishment process.

These issues were reported to result in discrepancies between refurbishment plans and the prison's operational needs, and in the handing over of K Wing before it was felt by some SLT and staff to be fully ready (due to capacity pressures and having been confirmed as safe for occupation).

Staff expressed concerns about security challenges and feelings of safety, particularly because of the stalled refurbishment delivery.

Despite improved accessibility on the refurbished wings, staff highlighted continued accessibility challenges for prisoners with mobility needs.

A lack of communal spaces for purposeful activity, community forming and developing meaningful relationships between prisoners and staff was highlighted. While not in scope for this project, staff and prisoners felt this was an unmet need.

Staff expressed some dissatisfaction with the condition of staff facilities and the quality of some of the work delivered in the staff showers.

5.1 Consultation during Refurbishment Planning

Consultation during the planning of the refurbishment was discussed at length by MoJ stakeholders, SLT and staff.

MoJ stakeholders reported that the SLT was involved throughout the design and implementation phases, with efforts made to seek and, where feasible, incorporate their input.¹⁵ However, one SLT interviewee reflected that he himself should have sought more active early and ongoing engagement with MoJ and contractors to better understand how plans translate into practice, and noted that he planned to do so moving forward. Several other SLT, staff and prisoners also expressed a strong desire to have been more involved in the consultation process to ensure that the refurbishment better considered and, where possible, addressed the specific needs of HMP Liverpool and its staff and prisoners. For example, some staff suggested that sharing information about the Governor and senior team's intended purpose of the wing with staff would enable them to offer more informed input and highlight key planning considerations:

"Is it going to be a remand wing? Is it going to be a lifer's wing? And asking the staff who worked in those particular areas, "What would you need? What makes it easier?" – Staff

Some SLT interviewees also perceived that a lack of staff consultation in specific areas, such as healthcare, during the refurbishment planning process, had implications for their ability to conduct their duties on the wings and ensure prisoners' needs were met. One SLT interviewee stated:

"I think where it would be useful for healthcare to have had some insight is on the dispensing areas and... ..the areas where they could do treatments, et cetera. [] So, I think there is some bits where we could add their voice better" - SLT

¹⁵ MoJ interviewees reported that project communication processes included the creation of a local project lead role in February 2021, who updated prison SLT about progress; a weekly working group during project initiation; a monthly meeting with governor from project team; a monthly meeting between the contractor and local project lead; and a fortnightly risk review meeting.

Another SLT interviewee reported that they had not been consulted about changes to the pharmacy hatches located on the wings. As a result, they felt the hatches did not meet the standards set by regulatory bodies.

Some SLT interviewees also discussed the importance of consulting and engaging staff members to enhance buy-in into the refurbishment project, stating: “If you could keep people involved and updated, then they’re more likely to respond to it.” Another SLT interviewee further suggested that the more active involvement of prison management — such as conducting walk-throughs during the refurbishment delivery — could enhance the early identification and resolution of potential safety risks.

Some staff highlighted the value of consulting prisoners during the refurbishment planning. One staff member referred to prisoners’ accessibility needs, stressing the importance of including prisoners’ perspectives and experiences about how they use their spaces.

5.2 Communication during Refurbishment Delivery

Several staff and SLT interviewees also described experiences where poor communication created issues during the delivery of the refurbishment.

For example, some staff and SLT members described on the ground communication from contractors to prison management about their day-to-day progress as limited or last-minute. One SLT interviewee also reported that they would frequently need to seek out information proactively from contractors about work being delivered and reflected on how this impacted their ability to deliver healthcare.¹⁶ They reported:

“It was quite often retrospective information, so something would happen and then we would have to go and kind of find the information. So, for example, when they refurbished I Wing, at one point you couldn’t walk through I Wing, there was a time when you could, but it was from a certain landing. And quite often the healthcare staff members were finding out after the fact who they’d go to walk on and then they’d be challenged and they couldn’t go on.” - SLT

¹⁶ It was not possible to obtain the contractor’s view because the company had gone into administration by the time of the research.

Interviewees also raised the issue of contractors handing over K Wing for reopening before some SLT and staff felt it was fully ready, since some work was still unfinished. One SLT interviewee expressed the view that handover checks showed that the “operational readiness of the build failed.” An MoJ stakeholder acknowledged that at the point of handover there were snagging/quality issues to be addressed and that due to capacity pressures a decision was taken to populate the wing and address these in parallel rather than delaying the handover. As a result, K Wing “wasn’t the quality that we would expect” at the point of handover but confirmed that the wing was “safely operational” by the time prisoners were moved into it, and the issues were then subsequently addressed. Several SLT interviewees paid tribute to the efforts of staff in quickly working to address issues with K Wing to ensure that prisoners could be moved in as planned. One SLT interviewee stated: “The staff were outstanding because they actually did [it], but they had to work around a hell of a lot of stuff they should have never had to deal with.” Another staff interviewee remarked: “It was managed well. You can’t knock the prison when it comes to clearing the wing or moving it on.”

Some communication challenges with contractors relating to day-to-day operationally-affected matters (e.g. security) affected efforts to resolve issues after the refurbishment was delivered. One SLT interviewee, for instance, described the difficulty of being required to communicate with external contractors to coordinate their access to the prison.

5.3 Misalignments between Refurbishment Plans and Prison Needs

Staff interviewees discussed some discrepancies between what had been delivered as part of the refurbishment and the needs of prisoners and staff at HMP Liverpool.

For instance, the layout of equipment in the cells, such as electricity sockets and heaters, were reported by prisoners and staff to be impractical. Some prisoners noted that the high position of the heaters meant they had to stand up to feel the heat during the colder months. These issues were also observed by the fieldworkers, who noticed differences in the intensity of the heat within refurbished cells. One prisoner interviewee described the impact of the placement of the sockets, noting that they had to move furniture around their

cell to use their appliances: "They don't give you an extension. So, I have to push my chair over and put my kettle on the chair."

Another staff member also discussed issues with changes made to the layout of cells for prisoners with mobility needs, noting:

"There were two disabled cells done on the wing I was working on. When I tried to move one of the guys who was a paraplegic, he was reliant solely on his chair and harness. He said the bed's on the wrong side. You could never lift him on from that side because the bed's against the wall" – Staff

Similar issues were also raised by healthcare staff working on the wings. They reported that they often went onto the wings to speak with prisoners, but the refurbishments did not include private spaces on the wings that could be used for these conversations. Such private spaces were not in scope for the refurbishment and were discussed as an unmet need. They felt that, as a result, it was difficult to balance visibility with the need for confidentiality during consultations. They stated that:

"We're often vying for space where we can find somewhere where it's a mix of confidential and safe. We need to be seen, and people need to know where we are. But we don't want to be stood on the landing doing a mental health review when the person's got no confidentiality. It would have been nice just for some clinical-type rooms" - SLT

Despite these challenges, the healthcare interviewee spoke positively of several changes made in the H Wing refurbishment, noting how the clinical space is now up to a good technical standard, allowing them to "reflect the care that people get in the community, which has always been a problem in prisons, especially in old prisons."

5.4 Security Challenges Associated with the Refurbishment

Security challenges were raised during interviews as a key issue in both the delivery and implementation of the refurbishment.

SLT and staff highlighted examples of challenges associated with contractors delivering the refurbishment being well addressed by the prison. For example, one SLT interviewee discussed installing temporary lockboxes to securely store contractors' tools in the prison. Another SLT interviewee described challenges associated with contractors initially being required to use the main entry of the prison to enter and exit each day, saying that there is "no space" and that "there's nowhere for vehicles...So, everything has to come in the prison...through that front door." However, the interviewee noted that the opening of another gate allowed contractors into the prison with minimal disruption. Some staff and SLT also commented that the security and logistical challenges in moving prisoners to different cells as wings were closed and reopened during refurbishment was managed well. However, during fieldwork observations one staff member noted that some "mains" (general population) prisoners had been distressed to learn that they were being moved into cells previously occupied by prisoners convicted of sexual offences (PCoSOs). They also reported that some prisoners had intentionally damaged cells they were vacating for PCoSOs to move into.

Several staff and SLT interviewees highlighted the significant disruption caused when refurbishment works were halted due to the contractor going into administration. For example, some tools were left behind and remained on the closed construction site until they could feasibly be removed. Some felt this created safety and logistical concerns. Fieldworkers also observed the visible impact of the pause in works, most notably the continued closure of G Wing. Notwithstanding the enclosed walkway that had been built to facilitate movement around the prison, the closure of G Wing was described by staff and SLT as having a substantial operational impact. One SLT interviewee referred to G Wing as the "main artery" of the prison, noting that its closure had been "a bit of a hit, operationally and staff just responding, because F Wing's now isolated and F Wing staff feel like they're on their own." This sense of isolation was echoed by a staff interviewee who commented that the closure of G wing "has made F Wing more dangerous because we just haven't got the backup or backup at speed."

Contraband also remained a persistent challenge within the prison. The refurbishment aims to address this by installing new windows and window cages to block drone activity and other methods of bringing in illicit goods across the whole prison. However, because

these upgrades had not yet been completed across all wings, their effectiveness was limited. Several SLT interviewees noted that windows in the not-yet-refurbished areas continued to serve as entry points for contraband. One prisoner emphasised the importance of the new windows in reducing the number of weapons and drugs entering the prison.

5.5 Feelings of (Un)Safety amongst Staff and Prisoners

Safety was a consistent theme in the reported experiences of SLT, staff and prisoners, though perceptions varied across these groups.

SLT interviewees generally felt the prison was safe, with one suggesting this was attributable to positive staff-prisoner relationships: "I think it's that we have a really good rapport with our prisoners and I think that keeps an even keel on things because prisoners-staff relationships are, I think, really good at Liverpool." Fieldworkers observed a mixture of positive and transactional interactions between some staff and prisoners during the fieldwork.

Staff views on safety were mixed. Some staff reported feeling unsafe on the wings, citing a mix of factors relating to, or not yet addressed by, the refurbishment - such as issues with the closure of G Wing and updates to CCTV systems – and factors outside their scope – such as low staffing levels and inexperienced colleagues. Others highlighted the lack of a consistent regime, which they felt contributed to increased prisoner frustration and heightened risk, a concern that was echoed by some prisoner interviewees. While staff welcomed the improved physical environment brought by the refurbishment, many did not feel these changes had significantly enhanced their sense of safety. A staff member on a refurbished wing reported:

"It's nicer to be on a refurbished wing for everyone. It probably has a lot of positive impact on people... [But] I feel unsafe on wings. But again, that can be on a refurbished wing, so I don't think it makes a difference. I think it's the lack of staff that is a concern for the prisoners" – Staff

In addition to feelings of safety, perceptions of violence were also discussed. Staff in the prison generally reflected that some level of violence was part of the prison environment and did not perceive a difference in violence levels between refurbished and not-yet-refurbished wings.

Prisoners' feelings of safety were also mixed but overall were not explicitly linked with the delivery or implementation of the refurbishment. Survey findings showed that most prisoners in the sample reported feeling safe now, as did some prisoner interviewees, particularly those living on smaller wings where the environment felt more controlled. Fieldworkers also observed that prisoners living on smaller wings appeared to have a stronger sense of community than those living on larger wings, which may contribute to feelings of safety on these wings. Others, however, linked their sense of safety to interpersonal dynamics — such as whether they had conflicts with other prisoners — or to the perceived lack of staff presence and support:

"On this wing... I feel safe. But when I was over there [on a not-yet-refurbished wing], I didn't feel safe. I feel safe because obviously, yes, this is a wing of safety... when I was on [another wing], there's not enough staff to supervise setting up the wings... So, obviously, that leaves... blind spot areas where assaults and other activities can take place. That would mean people who weren't trying to mix in, or move within those ways, so they feel vulnerable, yes" – Prisoner (refurbished wing)

5.6 Spaces for Relationship Building and Community Forming

Several staff, SLT, and prisoner interviewees in both refurbished and not-yet-refurbished areas highlighted the need for more communal spaces to support meaningful interaction between prisoners and between staff and prisoners.

While the refurbishment plans aimed to increase cell capacity and workshop spaces they did not include adding communal spaces. Several SLT, staff and prisoners expressed a strong preference for additional communal spaces—such as group rooms or areas where prisoners could cook or engage in other purposeful activities together. One SLT interviewee suggested creating spaces “where people can actually sit and have a

discussion”, to provide prisoners with space to interact with others or to relax quietly together. Another staff interviewee also noted that creating these types of spaces might be particularly beneficial for prisoners with neurodivergent needs:

“What we lack, even after the refurbishment, is common spaces, meeting spaces, group rooms, interview spaces. Ideally, anywhere where someone can sit quietly with a book or just relax a little bit. And that is especially relevant to someone who might be prone to having shutdowns or meltdowns when they get overwhelmed. To then not have anywhere where they could retreat to.” – Staff

Fieldworkers observed that there were few spaces for prisoners to have association time and gather. They noted that across the prison, prisoners tended to congregate on the landings, leaning on the railings in narrow corridors, and at the doorways of other prisoners’ cells to socialise, which impacted the atmosphere on the wing through increased noise levels and a more general feeling of disorderliness.

Restricted space on the wings was reported by some prisoner interviewees as hindering their ability to take part in purposeful activities such as peer support groups and reducing opportunities for movement and interaction, particularly when regime restrictions were also in place. Some prisoners also indicated that while the refurbishment aimed to improve the physical environment, many underlying factors contributing to their overall experience remained unaddressed, such as a lack of access to rehabilitation options and a limited purposeful activity offer.

Staff and prisoners in both refurbished and not-yet-refurbished wings generally described their relationships with each other as largely positive or indifferent. Survey data supported this finding, with around three-quarters of participants reporting that they felt supported by staff and that they were treated with respect by staff. However, opportunities for meaningful engagement and relationship building were reported to be limited, and interactions were described by some prisoners and observed by fieldworkers as occurring only on an ‘as needs’ basis.

Several SLT and staff acknowledged, and fieldworkers observed, that the age, size and structural constraints of the existing buildings meant that creating additional spaces was

very challenging. MoJ stakeholders also noted that the delivery of the planned workshops was phased to align with increases in the prisoner population as more cells are brought online.

5.7 Prisoner Accessibility

Staff members highlighted some ongoing challenges faced by prisoners with mobility needs in both refurbished and not-yet-refurbished wings.

Some cells were refurbished to ensure prisoners with accessibility needs, such as those requiring a wheelchair were able to enter their cells. However, gaps in meeting these needs were highlighted by some SLT and staff interviewees and observed by fieldworkers. For example, one SLT interviewee reported that “every wing should have a wheelchair-accessible cell.”

Another staff interviewee stated that the prison could benefit from having a lift to help prisoners with reduced mobility to access certain areas of the prison, such as the chapel, education spaces, and library.

“It could have made it much easier if you’d had a lift where you could have brought someone down who was struggling, rather than walking through stairs. None of that’s being addressed” - Staff

However, MoJ delivery stakeholders noted that this was not in scope of the project, due to the substantial expense of installing a lift, as well as the time required and impact on the refurbishment project.

MoJ stakeholders reported that accessibility was initially considered from the perspective of meeting technical requirements. They noted that some additional specific accessibility needs throughout the prison were identified and addressed following feedback from SLT and staff, such as the installation of additional ramps and rails. One MoJ stakeholder noted that this was a key lesson learnt from the refurbishment process and reported that it is being implemented in the remaining refurbishment projects in other prisons.

5.8 Quality of Staff Facilities

Some staff interviewees felt that their needs had been overlooked in the refurbishment, reporting little visible improvement to their spaces to date.

Many staff interviewees expressed dissatisfaction with the condition of staff facilities, noting that they were often limited in size and poorly maintained. They expressed the desire for the refurbishment's scope to include further improvements to staff facilities. For example, one staff member H Wing, said: "H Wing has always had a really small tearoom and facilities for staff... They [the refurbishments] haven't really addressed that." Other staff were disappointed with the quality of some of the refurbishment work in staff areas. One staff interviewee noted that while shower facilities had been upgraded in the refurbishment, the improvements were undermined by ongoing issues—for example, shower heads that frequently fell off.

Some staff members also discussed the implications of the position of staff facilities within the refurbished wings. A particular concern was the location of staff offices in the centre of the wings, which is different to the non-refurbished wings. While this placement may have been intended to improve oversight, some staff interviewees felt it compromised their privacy and working conditions because of noise and other distractions.

6. Perceived and Potential Benefits of the Refurbishment

In this section, we explore the perceived and potential benefits of the refurbishment that were reported by staff, SLT and prisoners.

Summary

Several aspects of the refurbishment delivered to date were seen by some staff and SLT as supporting more effective day-to-day prison management.

Single cells were viewed positively by staff and prisoners for improving privacy, reducing overcrowding, and supporting at-risk individuals. Retention of some double-occupancy cells was also valued, particularly for those with mental health needs or who preferred shared accommodation.

Staff noted that brighter, more modern environments supported the maintenance of decent conditions and contributed to staff morale.

Some improvements were made for prisoners with mobility needs, and improvements in reducing clutter and other stimuli were viewed by both staff and prisoners as helpful for people with neurodiverse needs.

Security enhancements, such as clearer sightlines, were introduced in later refurbishment phases (e.g., I and K Wings).

6.1 Effective Management of the Prison

The refurbishments delivered to date were seen by some staff, SLT and prisoners as contributing to more effective day-to-day management of the prison.

For instance, the refurbishment of two wings with single-occupancy cells was viewed by many staff and prisoners as a positive step toward enhancing prisoner privacy and

alleviating overcrowding, and as important for managing a safe and calm environment. It was also seen as helping to manage prisoners who were deemed at-risk of harming themselves or others, with one staff interviewee stating: “Single cells is (*sic*) a lot better because 9 times out of 10... one is a lot easier to manage than two”.

Some SLT interviewees also welcomed the decision to retain several double-occupancy cells, noting their value for individuals with mental health needs or those who preferred the company of a cellmate. One SLT stated:

“What they decided to do was to put H Wing and K Wing in single cells, which is something that the prison likes, because prisoners do like their own space... You know, a lot of prisoners like to be on their own, [but] it does have its problems. We’ve got people who’ve got suicidal tendencies, and you want to have someone in there to keep an eye on them and such” - SLT

6.2 Improving Living and Working Conditions in the Prison

Improvements to living and working conditions were frequently mentioned by both staff and prisoners in refurbished areas.

Several prisoner and staff interviewees reported that the cleanliness and brightness of the refurbished wings encouraged prisoners to want to maintain a clean and decent environment. One staff interviewee expressed hope that staff and prisoners alike could “more easily take that little bit more pride in it, because it isn’t as broken down as some of the other wings.” Results from the survey also indicated that prisoners felt that the wings were bright and clean, with almost three-quarters rating the communal areas as clean. One prisoner in a refurbished wing stated:

“Having the wing cleaner and that, we clean it, we keep it cleaner, and because it’s new, it looks newer, we want it to stay like that. It’s our ward, at the end of the day”
– Prisoner (refurbished wing)

Refurbished areas were described as cleaner and more comfortable than the not-yet-refurbished areas. Prisoners in refurbished wings described small but meaningful improvements to their wellbeing. One prisoner stated:

"It was a lot warmer and cleaner. A little bit bigger. It felt more like a room than the other ones. You had one with metal beds on [another wing] and these ones were wooden beds... So, yeah, it was a lot better than [the other wing], even though [it] was fine like say with the lads and all on there, but the room is a lot better" – Prisoner (refurbished wing)

In addition, some staff and SLT interviewees reported that the refurbished wings appeared brighter and more modern. One staff member felt that the brightness boosted their mood and improved their attitude, which helped their relationships with prisoners. Some prisoner interviewees also described how the refurbishments, including the improvements to the cleanliness and brightness of the wings, had had a positive impact on their mental wellbeing. These improvements were reportedly stated to improve the atmosphere of the refurbished wings. One prisoner stated:

"Being in prison has an impact on everyone's mental well-being, psychologically, but it's been more clean... being more cleaner makes you feel more better, obviously" – Prisoner (refurbished wing)

Similarly, one staff interviewee observed how on the refurbished wings, they:

"... [T]end to see a lot more people wanting to get out [of their wing] because not every time will they see sunlight every hour of the day, but on a bright wing, it does help, you know?" - Staff

Fieldworkers also noted a clear difference in brightness between refurbished and not-yet-refurbished wings. In the prisoner survey, out of all the cell and wing conditions asked about, there was strongest agreement with the statements that the wing and their cell are both 'light and bright'. The improved lighting (both natural through the replaced windows and artificial through improved internal lights) was reported to contribute to a more functional atmosphere and positively influenced staff morale. However, the flooring on the bottom level of K wing had not been replaced (as it was not technically required to meet standards), which detracted from the overall appearance of the space.

6.3 Supporting prisoners' unmet needs

Refurbished wings were also seen by some SLT, staff and prisoners as improving prisoners' experience in the prison, particularly for those with neurodiversity or mobility needs.

Design features such as improved lighting, clearer signage, wider doorways, and the reduction of visual clutter on wing walls were viewed by several staff and SLT as contributing to a more inclusive and accessible environment. The replacement of metal furniture with wooden furniture was also reported to have helped reduce noise and create a calmer atmosphere. This was seen by some SLT interviewees as providing meaningful improvements to the overall environment, particularly for individuals who may be sensitive to sensory stimuli such as neurodiverse people. This has the potential to help many prisoners, as around one in two of those who completed our survey reported they were neurodivergent. One SLT interviewee noted that the changes were not only beneficial for individuals with specific needs but also positively impacted the wellbeing of the prison population more broadly, particularly given wider mental health concerns of many prisoners. Fieldworkers observed that the noise on the refurbished wings was not excessive but did travel somewhat down the wings; the refurbished wings were somewhat quieter than the not-yet-refurbished wings.

The refurbishment was also reported to have brought improvements for prisoners with mobility needs. The importance of accessibility was underscored by the finding well over half of survey respondents felt they had a physical or mental disability. While the number of cells specifically designed for prisoners with such needs remained limited, those that had been upgraded were generally viewed as effective in providing appropriate support and enhancing day-to-day comfort. An SLT interviewee referred to the refurbishments on H and K Wings as improving options for prisoners with reduced mobility, and highlighted the thoughtful design of these facilities:

“What I do like about H and K is they've got the disabled cells on there. And they have the showers in there and the disabled access. So, people who are in wheelchairs or struggle with their mobility...everything's tailored for their needs,

which is a lot better since the refurbishment. It wasn't something we had before" -
SLT

6.4 Improvements to Security

Some refurbished features on I and K Wings were felt to improve security measures within the prison and reflected lessons learnt from the earlier refurbishment of H Wing.

Key enhancements on I and K Wings included ensuring clearer sightlines to improve supervision and minimise blind spots within the prison. Some SLT interviewees reported that these adjustments were beneficial to security management by allowing staff to monitor activities more effectively and respond promptly to incidents. When referring to the handrails on H Wing, which reportedly impacted sightlines (see Section 6.4), one staff interviewee reflected that they felt as though they were the “guinea pig[s]” for the design. They further stated that the later refurbishments had “learnt from that now because they’ve refurbished I and K since, and they’ve kept a low handrail” and painted them yellow or green for increased visibility.

Despite addressing some of the issues from earlier refurbishments, the impact of the improvements was perceived as limited because security features were not yet uniformly implemented throughout the entire prison. For example, as discussed in Section 6.4, some staff and SLT interviewees reflected on the ongoing challenges of new, more secure windows and window cages not being installed across the whole prison and the ongoing inflow of contraband. Overall, the security benefits were seen as localised, currently affecting only specific areas and yet to enhance security comprehensively across the establishment.

7. Trade-offs and Unintended Consequences of the Refurbishment

This section explores the trade-offs and unintended consequences of the refurbishment works that were experienced by staff, SLT and prisoners.

Summary

Built-in furniture was seen as a practical improvement by staff, supporting quicker checks and reducing concealment risks, but the use of wooden materials had more mixed views from staff and prisoners.

Replacing older fixtures with new materials helped reduce ambient noise, contributing to a calmer atmosphere. However, some staff noted that the acoustics made it harder to detect disturbances or communicate effectively.

New handrails and netting were introduced to improve physical safety, but some staff reported that the handrail obstructed sightlines on one wing, and new netting reduced natural light.

New windows introduced through the refurbishment created a brighter environment, but some prisoners reported difficulty sleeping due to increased brightness.

7.1 Safety and Security Changes

Staff, SLT and prisoners noted both advantages and unintended operational challenges associated with some of the recent design changes.

For example, some staff and SLT interviewees viewed the built-in furniture as practical, reducing concealment risks and speeding up checks. Standardised cell design was also reported to support more consistent monitoring, with one SLT member calling it a meaningful step toward stronger oversight: “Everything like it's in place. It's static. You can go in and check it, it's a lot easier.” Staff also pointed out that the design was anti-ligature

and could not be moved. Prisoners also appreciated the more organised environment, but some felt the fixed furniture limited personalisation, affecting their sense of autonomy and comfort. In addition, metal beds had been replaced by wooden beds as part of an estate-wide move to technical standard wooden furniture, which produced mixed feedback from staff and prisoners. Several staff and prisoners expressed safety concerns about the wooden materials, saying they felt they could be broken and used as weapons. However, prisoners generally viewed the wooden beds as more comfortable when compared to the metal bedframes previously in the cells, reduced noise within the wing and helped them feel less stressed in their living spaces.

Another staff interviewee discussed the installation of a new staircase on H Wing, describing it as a positive addition because it was not as steep as the previous staircase. However, they also reported that the position of the staircase impacted sightlines for staff members working on the wing, affected the ability to hear goings-on in the wing. While there were likely to be logistical reasons for this positioning, they felt this was another instance in which more staff consultation would have improved the refurbishment plans.

Noise reduction was another area where the refurbishment reportedly brought both benefits and challenges. The replacement of older fixtures with new wooden materials was described by some staff interviewees as helping to reduce ambient noise, creating a generally quieter and calmer environment in the refurbished areas. One staff member reported that "The refurbished wings are calmer, quieter...with less shouting and noise and running around, et cetera." However, some staff interviewees expressed concern that the metalwork introduced on H Wing, such as railings, made it more difficult to detect activity or disturbances from a distance. This was reported to potentially reduce situational awareness and delaying response times to security incidents, which made some staff and prisoners feel less safe. One staff interviewee stated:

"It's not until you're on there properly and then you start realising, Hang on a minute, I can't see what's going on. I can't hear what's going on" - Staff

Another member of staff commented about the impact of the refurbishment on blind spots in H and K Wings:

“There's a lot of steelwork and there's a lot of metalwork and I'm sure there's been no way around that to do it. But it's the state of when you go on the wing. I don't think staff and prisoners are very visible when you first go on because of the amount of the structure of the wing and the staircases and the landings. And I'm sure there's been no way around it because I'm sure that's been thought out, but there's sort of blind spots and it's not very clear. Before it was refurbished, it was far; when you walked into the unit, you could see far better than what you can now.”

- Staff

Staff and SLT also raised concerns about several safety-related design changes, particularly those implemented on H Wing. For example, new netting was intended to prevent falls and improve safety. However, some staff interviewees reflected that it impacted officers' visibility on the wings and hindered the ability to hear disturbances. One staff interviewee reported that visibility was particularly “poor” when looking from one landing to another within a wing and that the handrails and netting negatively impacted their ability to monitor prisoners effectively. Fieldworkers observed that there was more metalwork on H Wing when compared to the other two refurbished wings. While the railings were built in line with technical specifications, fieldworkers noted that they impacted visibility across the wing. However, lessons from the H Wing refurbishment were applied in subsequent work in I and K Wings to ensure that handrails and metalwork were installed without obstructing sightlines. The handrails in H Wing have also now been painted yellow/green instead of white, to increase their visibility and decrease the tendency to detract from being able to see fellow officers' white shirts.

Some prisoners had mixed views on whether the higher railings stopped people from jumping off the landing. Furthermore, one staff member believed the new staff access gate to the netting made it easier for prisoners to jump as they could fit through it. They stated:

“It doesn't stop them. They still jump over. They actually now, because they're on the gates or even on the rails, the shape that they've done it, they just step through.”

Step through and get on. They don't even have to climb over now because it's so wide, the gaps in between the design. So, it's really pointless, really" – Staff

Upgraded CCTV was introduced to improve surveillance and safety by ensuring reliability and lessening blind spots, but staff and SLT reported issues with their operation due to outdated wiring, leading to connectivity problems and blind spots remaining unaddressed. Some suggested these challenges stemmed from integrating new systems with old infrastructure, with one SLT member noting: "Instead of changing the whole infrastructure of the CCTV, they just changed the cameras. The wiring didn't support it, so we were left with poor CCTV afterwards." An MoJ interviewee reported that work on improving CCTV coverage had paused due to the works stopping. These technology issues were reported by several staff to reduce their confidence in maintaining safety in the prison.

7.2 The Effect of Improved Light on Sleep

The installation of new windows considerably improved natural lighting, contributing to a brighter and more modern environment.

However, some prisoner interviewees reported difficulty sleeping due to the increased brightness, particularly in the early mornings, suggesting that improved brightness during the day may have negatively affected prisoners' rest and routine. Survey findings echoed the qualitative data, showing that the majority of participants felt their sleep quality was not good. Just over half said it was quiet enough for them to sleep, but nevertheless 60% rated their sleep quality as bad. One prisoner in a refurbished wing stated:

"I haven't got any blind rack. If it came to the night, yeah, no problem. But when it's in the morning, I need something to cover the window. I don't want to wake up because of the sun" – Prisoner (refurbished wing)

8. Findings from the Economic Review

The economic review aimed to strengthen the evidence base on the potential benefits of prison refurbishment and to test and validate the relevance and existence of five key benefits at HMP Liverpool. It also aimed to monetise potential impacts, where sufficient information exists in the literature.

This section presents the findings, focusing on five key outcomes relevant to the refurbishment of HMP Liverpool: prisoner health and wellbeing, violence, misconduct, feelings of safety and prisoner-staff relationships. These key outcomes and the pathways through which the refurbishment aimed to achieve these outcomes were identified in the theory of change for HMP Liverpool, see Annex A. As discussed in Section 3, the economic review included a targeted literature review, validation of pathways from the literature based on a re-analysis of the qualitative data gathered in the process evaluation and, where possible, illustrative monetisation of relevant outcomes.

Summary

The targeted literature review highlighted that relationships between factors relating to refurbishment and outcomes are interrelated, with many common factors influencing the five primary outcomes and several outcomes also acting as factors influencing other outcomes.

The literature does not provide a clear overview of the most important factors or the relative weight of each factors effect on a given outcome.

Interviews and focus groups with prisoners at HMP Liverpool validated several pathways from the literature, with prisoners expressing that they felt:

- The prison's physical conditions were associated with positive prisoner health and wellbeing while long periods of in-cell confinement and a lack of purposeful activity were associated with negative prisoner health and wellbeing.

- High levels of prisoner-staff interactions and positive prisoner-staff relationships were associated with lower levels of violence, while long periods of in-cell confinement and cell sharing were both associated with higher levels of violence.
- Higher levels of prisoner-interactions with staff were associated with increased feelings of safety among prisoners, whereas involvement in violence or misconduct could make prisoners feel less safe.

Evidence from the targeted literature review suggested that there is potential monetary value in improving some factors that influence some of the five outcomes, particularly cellmate relationships, feelings of safety and boredom.

However, there was very limited statistical evidence on how factors related to refurbishment affect relevant outcomes. As such, important factors such as access to purposeful activity, in-cell confinement and relationships with staff, could not be monetised but likely have substantial value.

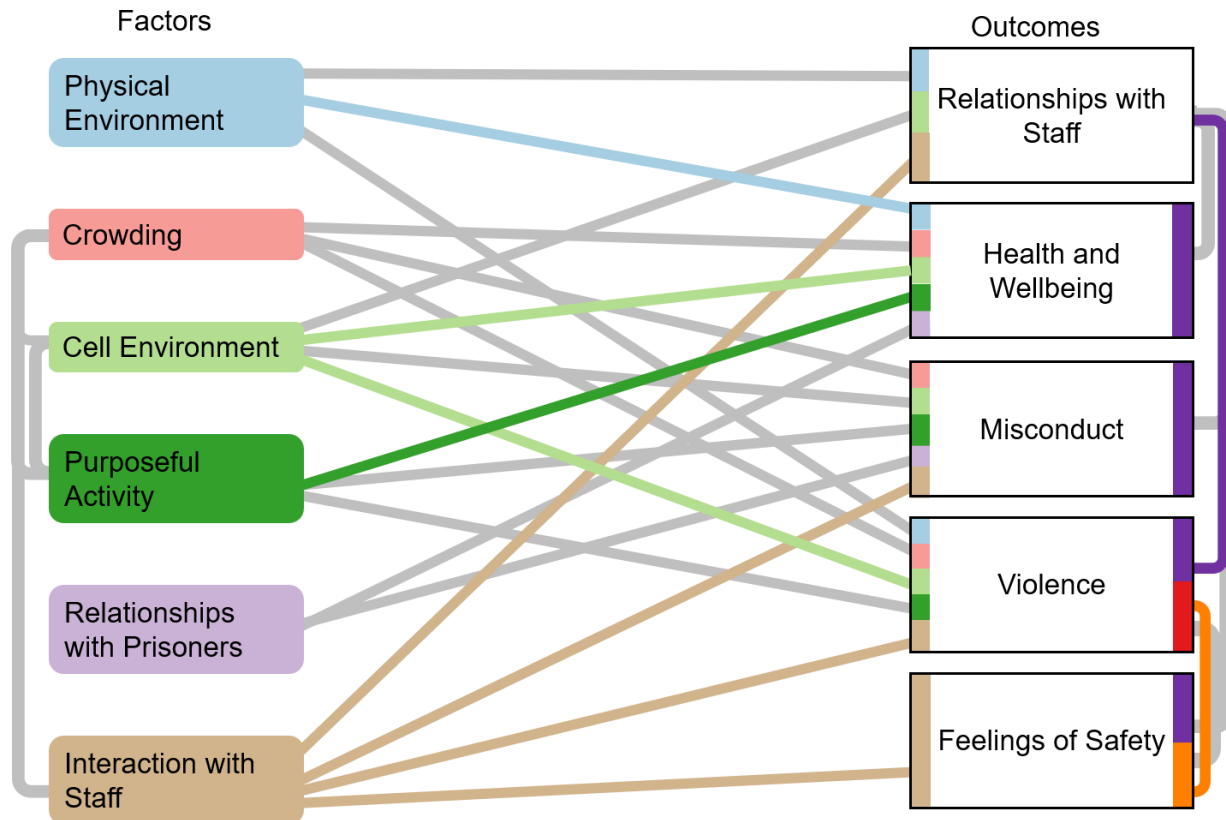
8.1 Overview of relationships between refurbishment relevant factors and outcomes

Only factors and outcomes intended to be affected by the refurbishment of HMP Liverpool were included in the economic review. These are set out in causal mechanisms 1-5 in the theory of change (at Appendix A).¹⁷ Figure 1 provides an overview of the relationships between the factors and outcomes included in the review.¹⁸

¹⁷ The theory of change in Annex A shows the intended outcomes of the refurbishments. Purposeful activity is included as, although increased purposeful activity at HMP Liverpool is not an outcome as it stands, it is likely to be in so in the future, once the new workshop spaces come on stream.

¹⁸ Additional, more detailed diagrams showing the relationship between factors and each outcome (individually) are provided in Annex C.

Figure 1. Relationships between factors relating to refurbishment and prisoner outcomes from the targeted literature review



As shown by the connecting lines in Figure 1, there are many common factors that have been found to influence the five primary outcomes of interest, with several outcomes also acting as factors influencing other outcomes (as indicated by the connecting lines at the right-hand side of Figure 1). The notable overlap between factors suggests that improvements in any given factor could drive positive change across multiple outcomes. However, the literature does not provide clear evidence on which factors are most influential on prisoner outcomes; instead, the evidence indicates that many factors are interrelated. For example, the level of crowding within a prison can influence cell sharing, the availability of purposeful activity and out of cell activities, prisoner-staff ratios, access to healthcare services and the transmission of contagious diseases.

The economic review then tested and validated the occurrence of these relationships, found in the literature, using the qualitative data from HMP Liverpool process evaluation. Data from interviews and focus groups identified similar relationships between factors and

outcomes within the prison, such as interaction with staff increasing feelings of safety and long periods of in-cell confinement negatively affecting prisoners' wellbeing. The coloured connecting lines in Figure 1 show relationships that were validated within HMP Liverpool, and grey lines show relationships not validated. However, as discussed in Section 3.4, this does not necessarily mean that these relationships do not exist within HMP Liverpool as validation relied on data from interviews and focus groups with a limited number of prisoners and staff.

8.2 Factors affecting health and wellbeing

Findings from the targeted literature review

The targeted literature review identified that prison crowding, the cell environment, prolonged confinement and the physical environment of the prison impact the health and wellbeing of prisoners.

The most prevalent factor impacting the health and wellbeing of prisoners in the reviewed literature was **prison crowding**, which can increase cell sharing and prolonged confinement in cells, limit access to resources (including healthcare services), reduce opportunities for purposeful activities like education and work, and increase the likelihood of prisoners' being placed in prisons or cells not suitable to their needs (MacDonald, 2018; National Audit Office, 2020; Criminal Justice Alliance, 2012). Crowding is also associated in the identified literature with heightened stress, sleep disruption, social withdrawal and increased aggression among prisoners (Engstrom & van Ginneken, 2022; Molleman & van Ginneken, 2014; Ross et al., 2022).

The **cell environment** has been found to significantly affect prisoners' health and wellbeing. Shared cells may increase the risk of disease transmission, unsafe practices (such as sharing razor blades or needles), and heightened stress that adversely impacts mental and physical health (Molleman & van Ginneken, 2014). Privacy violations, such as sharing toilet facilities, and negative relationships with cellmates exacerbate these effects, although positive cellmate relationships can mitigate some adverse outcomes (van Ginneken, 2022; Wener, 2012). **Prolonged confinement**, such as prisoners' spending up to 23 hours daily in their cell, is strongly linked to mental health deterioration, including

increased anxiety and depression, and may create a vicious cycle where mentally ill prisoners are more likely to be isolated, worsening their conditions (Ross et al., 2022; Wener, 2012). Limited time out of cells may increase stress by forcing prisoners to choose between essential activities such as showering and contacting family. Meanwhile, access to recreational spaces and extended recreation time has been shown to improve cognitive function and reduce reliance on maladaptive coping strategies like alcohol consumption (Ricciardelli & Sit, 2015; Alves et al., 2024).

The **physical conditions** of the prison, such as outdated infrastructure, poor ventilation and insanitary conditions, have been reported to increase respiratory illness and the transmission of communicable diseases (Turner et al., 2023; Engstrom & van Ginneken, 2022; Guo et al., 2019). Insanitary conditions can also negatively affect prisoners' wellbeing, sense of identity, self-control, and self-respect (Engstrom and van Ginneken, 2022). High levels of noise can damage prisoners' (and staff's) hearing and lead to physical symptoms such as nausea, headaches and high blood pressure (Wener, 2012). Insufficient exposure to natural light can cause vitamin D deficiency, depression, disruption of circadian rhythms, hormone dysregulation and long-term health consequences, while insufficient darkness during the night can cause sleep disturbances (Wener, 2012). Prison conditions (such as exposure to excessive noise, artificial light and uncomfortable heat) can also disrupt prisoners' sleep hygiene, increase psychiatric symptoms or aggression, impair concentration, and negatively affect mood and overall wellbeing, as well as potentially causing physical health complications resulting from chronic stress (Turner et al., 2023; Engstrom & van Ginneken, 2022; Elger, 2009; Dewa et al., 2015).

Findings from the qualitative data at HMP Liverpool

The interviews and focus group data validated findings from the targeted literature review, with prisoners and staff suggesting that the physical environment, prolonged confinement and access to purposeful activity can affect prisoner wellbeing.

In interviews and focus groups conducted as part of the process evaluation, the impact of the **physical environment** on prisoners' health and wellbeing was noticeable and supported the findings from the targeted literature review. As discussed in Chapter 5

above, several prisoners in refurbished wings commented favourably on the wings' **cleanliness** and reported that it made them feel “better” or “healthier”. Some prisoners in refurbished wings also gave positive statements about the impact of **increased privacy** in their cells (particularly when using the toilet) on their wellbeing, a direct outcome of the refurbishment. The value of privacy linked to being in a single cell was also spoken about positively by some prisoners in both refurbished and not-yet-refurbished wings. In addition, several members of the SLT and prison staff provided anecdotal evidence of the positive impact of improved physical conditions and the negative impact of cell sharing on prisoners' health and wellbeing.

Some prisoners in refurbished wings highlighted the negative impact of very warm or cold temperatures in the prison and uncomfortable bedding on their wellbeing. However, several prisoners highlighted that the improvements to the physical conditions of the prison were less impactful on their wellbeing than time out of cell and access to purposeful activity, both of which were impacted by the limited availability of prison staff, a factor unrelated to refurbishment.

Monetising the potential impact of factors on health and wellbeing

Despite the qualitative evidence linking factors related to prison refurbishment with prisoners' health and wellbeing, the targeted literature review identified only one study with a health and wellbeing outcome suitable for monetisation.

Favril and van Ginneken (2023) found that improvements in prisoners' perceptions of social support, personal autonomy, physical safety and decency were associated with reductions in psychological distress during imprisonment. To estimate the monetary values of the changes in wellbeing corresponding to the change in emotional wellbeing measured by Favril and van Ginneken (2023) (summarised in Table 2), the team used established research to convert changes in emotional wellbeing to changes in wellbeing-years (WELLBYs) (Parkes, 2025).¹⁹ The team then used HM Treasury's recommended value of

¹⁹ One WELLBY corresponds to a one-point change in an individual's life satisfaction for one year (HM Treasury, 2021).

£13,000 per WELLBY (at 2021 prices) and adjusted it to 2024 prices²⁰. This value was based on an average of estimates from willingness-to-pay research and quality-of-life-year valuations. The calculated, illustrative monetary values associated with improvements in the prison environment and relationships on prisoners' psychological wellbeing are presented in Table 2.

Table 1: Illustrative Monetisation of Relevant Health and Wellbeing Outcomes²¹

Note: The numbers in this table reflect findings from the literature and do not reflect savings/costs relating to HMP Liverpool. Additional research would be required to understand how dependent measures changed within HMP Liverpool because of the refurbishment and then estimate the actual cost saving.

Measure²²	Estimated Change in WELLBY	Estimated Monetary Value (£ per prisoner per year in 2024 prices)
Individuals who felt they had poor social support (rather than good) were associated with 6% increase in psychological distress (Favril and van Ginneken, 2023)	- 0.06	- 1,048
A 1% increase in personal autonomy was associated with 0.9% decrease in psychological distress (Favril and van Ginneken, 2023)	+ 0.009	+ 144
A 1% increase in perception of physical safety was associated with a 0.4% decrease in psychological distress (Favril and van Ginneken, 2023)	+ 0.004	+ 64

²⁰ Equivalent to £1560 in 2024 price, adjusted using the Consumer Price Index (CPI) data from the Office for National Statistics (2025).

²¹ The monetisation exercise relies exclusively on evidence from the literature and databases, without integrating qualitative insights.

²² All measures in this table are from Favril and van Ginneken (2023).

A 1% increase in decency ²³ was associated with a 0.4% decrease in psychological distress (Favril and van Ginneken, 2023)	+ 0.005	+ 72
--	---------	------

8.3 Factors affecting levels of violence

Findings from the targeted literature review

Findings from the targeted literature review underscore how prison crowding, cell conditions, the physical environment, and access to purposeful activity influence violence within prisons, particularly between prisoners.

Crowding was the most common factor discussed within the reviewed literature on violence within prisons. High levels of overcrowding are associated with increased assault rates and aggression.²⁴ Kurzfeld’s (2019) study of California prisons found that reducing prison crowding by 10% could reduce the rates of assault and battery by 12% to 15%. Cell sharing, often a consequence of overcrowding, can escalate minor conflicts into violence, particularly when relationships between cellmates are poor (National Audit Office, 2005; van Ginneken, 2022). Extended in-cell confinement, while reducing violence during lock-up periods, can increase tensions that manifest as aggression during limited out of cell time (Ricciardelli & Sit, 2015).

The **physical environment** of the prison has been found to influence levels of violence, primarily through the effect of noise and lack of access to natural daylight and darkness on prisoners’ irritability and aggression levels (Turner et al., 2023; Wener, 2012). The physical environment can also indirectly influence levels of violence in the prison by impacting prisoners’ mental function, stress response, and quantity and quality of sleep, which can increase aggressive behaviour among prisoners (Wener, 2012). Bierie (2012) also found

²³ Decency was measured using the Quality of Prison Life survey and was assessed through agreement with statements such as ‘Prisoners spend too long locked up in their cells in this prison’.

²⁴ An MoJ study published after the literature review and illustrative monetisation was completed also found a statistical relationship between overcrowding and assault in English and Welsh closed adult public prisons: ‘Prisoners in overcrowded cells are 19% more likely to be involved in an assault over a one-year period than those in cells that are not overcrowded’ (Ministry of Justice, 2025b). While we were not able to include this research in our report as it was published after the work was completed, it supports the evidence in this report that overcrowding can significantly impact levels of violence in the prison.

that factors such as lower levels of noise, reduced clutter and improved cleanliness, sanitation and privacy within the United States prison facilities, were significantly associated with fewer serious violent incidents.

Higher levels of **purposeful activity** within a prison are associated with lower levels of aggression, serious prison misconduct, and violence. This is potentially because they provide ways for prisoners to pass the time and create structure in their day, while limiting the opportunities for violence (McGuire, 2018, Ricciardelli & Sit, 2015). The absence of such activities during the COVID-19 pandemic in English and Welsh prisons contributed to heightened violence (HM Chief Inspector of Prisons, 2022). Structured programmes, such as boot camps, not only reduce violence but also foster supportive relationships among prisoners and staff (Schultz et al., 2024). Feelings of boredom are strongly associated with violence, as shown in Rocheleau's (2013) study, where difficulty in managing boredom significantly increased rates of violent disciplinary incidents. Additionally, prisoners in higher-security institutions, where supervision relies heavily on security cameras rather than officer presence, report greater feelings of vulnerability and threats, which can lead to violence as a means of asserting dominance for self-protection (Ricciardelli & Sit, 2015).

Findings from the qualitative data at HMP Liverpool

The interviews and focus group data validated findings from the targeted literature review, with prisoners and staff suggesting that in-cell confinement, cell sharing and interaction with staff can impact levels of violence within the prison. However, they provided limited evidence that the refurbishment had impacted levels of violence within the prisoners.

Prisoners, staff and SLT in this evaluation provided differing accounts of levels of violence in HMP Liverpool. Prisoners in refurbished wings and SLT highlighted **in-cell confinement** as increasing tensions and a trigger point for violence, particularly when combined with spending up to 23 hours a day in a cell with a cellmate. Several prisoners (in refurbished and not-yet-refurbished wings) stated that the **lack of staff presence** increased levels of violence, and one prisoner reported that it led to “blind spots where assaults and other activities can take place.” These findings support pathways identified in the literature on the relationship between in-cell confinement, cellmates and staff

interaction on levels of violence. This suggests that refurbishment's intention to reduce cell sharing by increasing the number of available cells may decrease levels of violence within the prison, though highlights that some factors not intended to be improved by the refurbishment seem to be impacting the level of violence within the prison.

Monetising the potential impact of factors on health and wellbeing

The evidence summarised in the table below demonstrates that a range of factors — including psychological distress, physical health, cellmate relationships, crowding, physical conditions, boredom and concerns about safety — have measurable effects on the incidence of violence within prisons. Notably, poor relationships with cellmates and increased boredom are associated with particularly large increases in both serious and non-serious violent incidents, which suggests that increasing the number of single cells and workshop spaces as part of the refurbishment may reduce levels of violence. Meanwhile, improvements in cleanliness and physical conditions are linked to significant reductions in violence. The monetised estimates – presented in Table 3 – highlight the potential economic benefits of interventions targeting these factors, reinforcing the importance of addressing both environmental and relational aspects of prison life to reduce violence and improve overall outcomes.

Table 2: Illustrative Monetisation of Relevant Violence Outcomes

Note: The numbers in this table reflect findings from the literature and do not reflect savings/costs relating to HMP Liverpool. Additional research would be required to understand how dependent measures changed within HMP Liverpool because of the refurbishment and then estimate the actual cost saving

Measure	Estimated Change in Number of Serious Violent Incidents ²⁵	Estimated Change in non-serious Violent Incidents ²⁶	Estimated Monetary Value (£ per prisoner per year in 2024 prices) ²⁷
---------	---	---	---

²⁵ The baseline number of serious violent incidents in the England and Wales prison estate is 39 per 1000 prisoners. (Ministry of Justice & Offender Management Service, 2025) [Safety in custody statistics]
²⁶ The baseline number of non-serious violent incidents in the England and Wales prison estate is 312 per 1000 prisoners (Ministry of Justice & Offender Management Service, 2025) [Safety in custody statistics]
²⁷ This was calculated using the cost of crime data (Heeks et al, 2016) and uplifted from 2015/2016 prices to 2024 prices using ONS (2025).

A 1% increase in psychological distress is associated with a 1.1% increase in the probability of using violence (van Ginneken, 2022)	Increase of 0.4 per 1,000 prisoners	Increase of 4 per 1,000 prisoners	- 36
A 1% increase in physical health is associated with a 0.74% decrease in the probability of using violence (van Ginneken, 2022)	Decrease of 0.3 per 1,000 prisoners	Decrease of 2 per 1,000 prisoners	+ 24
Having a poor (rather than neutral) relationship with a cellmate is associated with a 244% increase in the probability of using violence (van Ginneken, 2022)	Increase of 95 per 1,000 prisoners	Increase of 760 per 1,000 prisoners	- 7,767 ²⁸
A 1% increase in crowding is associated with a 1.6% increase in the rate of violent incidents (Kurzfeld, 2017)	Increase of 0.6 per 1,000 prisoners	Increase of 5 per 1,000 prisoners	- 50
A 1% improvement in physical conditions (Rodents, Fire Safety, Sanitation, Privacy, Noise) is associated with a 0.5% decrease in violent incidents (Bierie, 2012)	Decrease of 0.2 per 1,000	Decrease of 1.5 per 1,000 prisoners	+ 15
A 1% increase in boredom is associated with a 7% increase in	Increase of 3 per 1,000 prisoners	Increase of 24 per 1,000 prisoners	- 246

²⁸ As this is a categorical variable with three levels (poor, neutral, good) rather than a continuous variable, caution should be taken in comparing this value with the other values in the table, which all relate to very small changes in continuous values.

violence (Rocheleau, 2013)²⁹

A 1% increase in concerns about safety is associated with a 7% increase in violence (Rocheleau, 2013) ³⁰	Increase of 3 per 1,000 prisoners	Increase of 24 per 1,000 prisoners	- 246
---	-----------------------------------	------------------------------------	-------

8.4 Factors affecting levels of prisoner misconduct

Findings from the targeted literature review

Findings from the targeted literature review indicate that the cell environment, access to purposeful activity, relationships between prisoners and staff and crowding all impact prisoner misconduct, including verbal misconduct, possession/use of drugs or other contraband items, theft and damage to property.

The most discussed factor in the literature in relation to misconduct was **purposeful activity** (such as gardening programmes, in-prison jobs or education programmes) which was associated with lower levels of misconduct and illicit drug use (Duke et al., 2024, Rocheleau, 2013, Bosma et al., 2014). This could be because they provide prisoners with structure and ways to pass the time. Purposeful activities were also found to potentially reduce misconduct by improving the relationship between prisoners and staff (Shultz et al., 2024). Bosma et al. (2014) similarly found that prisoners who reported better relationships with staff had lower levels of misconduct.

Research on **cell sharing** and misconduct has produced mixed results: van Ginneken (2022) found that prisoners with poor cellmate relationships reported more misconduct

²⁹ Rocheleau's research found that a one-unit increase in one's difficulty dealing with boredom was associated with a 156 per cent increase in one's annual rate of violent disciplinary reports. Given this relationship between difficulty dealing with boredom and violence, it is likely that increase in boredom levels are also associated with levels of violence (as displayed in the table) but there may also be individual level factors influencing this finding that are not fully controlled for in the study's original regression analysis.

³⁰ In Rocheleau's research, prisoners were asked, for this question, to assess how hard concerns about safety were for them to deal with. It is likely that those who found concerns about safety harder to deal with had more concerns about safety (as presented in the table), but there may also be individual level factors influencing this finding that are not fully controlled for in the study's original regression analysis.

than those with neutral relationships or single cells, while Bosma et al. (2019) found higher misconduct among those in single cells. These differences may reflect that prisoners placed alone are often those with behavioural issues that contraindicate cell sharing.

Crowding within prisons can also increase levels of prisoner misconduct as it exacerbates the factors above, for example through decreased opportunities for purposeful activity, reduced options for prisons to separate prisoners, and increased reliance on cell sharing (Molleman & van Ginneken, 2014; van Ginneken et al., 2017).

Findings from the qualitative data at HMP Liverpool

In this evaluation, several prisoners in refurbished wings and staff/SLT highlighted misconduct such as drug use within the prison and issues with contraband entering the prison (e.g., through the windows). One prisoner in a refurbished wing suggested that prisoners use drugs as a coping mechanism to deal with mental health issues and the boredom of life in prison. Another member of staff reported that staff's poor visibility over parts of one of the refurbished wings provided blind spots for drug exchanges. Prisoners also reported varying levels of theft (even within the same wing). However, they could not provide insights about what factors might be impacting other prisoners' choices to engage in theft.

Monetising the potential impact of factors on health and wellbeing

The quantitative evidence presented in Table 4 reinforces the findings from the targeted literature review and interviews, highlighting the impact of both environmental and relational factors on prison misconduct. Poor relationships with cellmates are associated with a particularly large increase in misconduct, while psychological distress and being in a single cell are also linked to higher rates of misconduct. Conversely, improvements in psychological health, staff-prisoner relationships, and the availability of meaningful activities are associated with reductions in misconduct. This suggests that increasing the number of cells, as well as improving the quality of the physical environment, may reduce levels of misconduct, particularly where it allows the prison to have more agency in whether prisoners are in shared cells. The monetised estimates further demonstrate the potential economic benefits of interventions that target these factors.

Table 3: Monetisation of Relevant Misconduct Outcomes

Note: The numbers in this table reflect findings from the literature and do not reflect savings/costs relating to HMP Liverpool. Additional research would be required to understand how dependent measures changed within HMP Liverpool because of the refurbishment.

Measure	Estimate Change in Number of Adjudications for Unauthorised Transactions^{31, 32}	Estimated Monetary Value (£ per prisoner per year in 2024 prices)³³
A 1% increase in psychological distress is associated with a 1.3% increase in misconduct (van Ginneken, 2022)	Increase 6 cases per 1,000 prisoners	- 11
Having a poor (rather than neutral) relationship with one's cellmate is associated with a 92% increase in the probability of committing misconduct (van Ginneken, 2022)	Increase 455 per 1,000 prisoners	- 836 ³⁴
A 1% increase in physical wellbeing is associated with a 0.5% increase in the probability of committing misconduct (Bosma et al., 2019)	Increase 2 per 1,000 prisoners	- 4

³¹ As there is limited publicly available data on prisoner misconduct, the research team used data from a 2021 MoJ report (Fortescue et al., 2021) on the total number of 'Adjudications for Unauthorised Transactions', which they divided by the prison population to estimate the number of adjudications of unauthorised transitions per prisoner. Disciplinary adjudications are a formal process used in response for incidents of more serious rule breaking, with adjudications of unauthorised transitions referring to rule breaking involving having prohibited items, consuming alcohol, receiving controlled drugs and selling items allowed only for personal use (Fortescue et al., 2021). The research team choose this measure as it aligns closely with the definition of misconduct used in the reviewed literature.

³² The baseline estimate of the number of adjudications of unauthorised transitions in the England and Wales Prison Estate is 493 per 1000 prisoners (Fortescue et al., 2021; Ministry of Justice, 2025) Offender management.]

³³ This was calculated using the cost of crime data (Heeks et al, 2016) and uplifted from 2015/2016 prices to 2024 prices using ONS (2025).

³⁴ As this is a categorical variable with three levels (poor, neutral, good) rather than a continuous variable, caution should be taken in comparing this value with the other values in the table, which all relate to very small changes in continuous values.

A 1% increase in psychological health is associated with a 0.8% decrease in the probability of committing misconduct (Bosma et al., 2019)	Decrease 4 per 1,000 prisoners	+ 7
A 1% increase in prisoner relationships is associated with a 0.6% decrease in the probability of committing misconduct (Bosma et al., 2019)	Decrease 3 per 1,000 prisoners	+ 6
A 1% increase in staff-prisoner relationships is associated with a 0.9% decrease in the probability of committing misconduct (Bosma et al., 2019)	Decrease 4 per 1,000 prisoners	+ 8
A 1% increase in staff prisoner ratio is associated with a 0.8% decrease in the probability of committing misconduct (Bosma et al., 2019)	Decrease 4 per 1,000 prisoners	+ 8
A 1% increase in the availability of meaningful activities is associated with a 0.9% decrease in the probability of committing misconduct (Bosma et al., 2019)	Decrease 4 per 1,000 prisoners	+ 8
Being in a single cell (rather than sharing) is associated with a 39% increase in misconduct (Bosma et al., 2019)	Increase 193 per 1,000 prisoners	- 354 ³⁵

³⁵ As this is a binary variable with two levels (single cell, shared cell) rather than a continuous variable, caution should be taken in comparing this value with the other values in the table, which all relate to very small changes in continuous values.

8.5 Factors affecting feelings of safety

Findings from the targeted literature review

The level of violence within a prison, along with prisoners' involvement in violence and their interactions and relationships with staff, have all been found in the identified literature to impact prisoners' feelings of safety.

The **level of violence** in a prison, as well as prisoners' involvement in violence, has been found to strongly shape perceptions of safety, with both personal and vicarious experiences of violence contributing factors (Ricciardelli & Sit, 2015; Ellison et al., 2022). Former prisoners in Ricciardelli and Sit's (2015) interviews reported feeling safer in lower security facilities, which had fewer violent incidents, though they still felt there was some risk of harm. Furthermore, prisoners who had perpetrated violence often felt less safe (likely reflecting an actual increased risk of violence) (Ellison et al., 2022).

Interactions and **relationships between prisoners and staff** also influence perceptions of safety. Prisoners who viewed officers as more fair, respectful and effective generally felt safer than those who perceived officers as illegitimate (Ellison et al., 2022). Morin's (2016) study of prisoners in an American direct supervision prison revealed mixed perceptions: some participants felt that open spaces and increased interaction with correctional officers enhanced their feelings of safety, while others felt less safe.

The use of **security cameras** also presents mixed effects. Cameras have been found to enhance perceptions of supervision and can provide evidence in instances of abuse. However, they may also create blind spots due to more limited physical presence of staff, reduce privacy, and diminish direct staff-prisoner interaction, sometimes negatively impacting feelings of safety (Engstrom & van Ginneken, 2022; Ricciardelli & Sit, 2015).

Findings from the qualitative data at HMP Liverpool

In our evaluation, several prisoners highlighted the presence of staff as impacting their sense of safety. For example, one prisoner (in a not-yet-refurbished wing) said that they felt safe because the staff had good visibility and looked after them. However, several prisoners in both refurbished and not-yet-refurbished wings reported a lack of visible

prison staff which negatively impacted their feelings of safety. One prisoner in a refurbished wing stated that he had recently been attacked and felt that there had not been any officers to intervene. Another prisoner stated that the lack of staff left blind spots where violence could occur. Several prisoners in both refurbished and not-yet-refurbished wings also attributed feelings of safety to the **individual's attitude and mental state**, with one prisoner stating that “you make as much trouble for yourself as you want”. These prisoners suggested that getting involved in violence, drugs or other misconduct was related to prisoners becoming less safe.

Monetising the potential impact of factors on health and wellbeing

The targeted literature review did not find any evidence that could be used to monetise factors impacting feelings of safety.

8.6 Factors affecting the relationships between prisoners and staff

Findings from the targeted literature review

The targeted literature review identified that the amount of interaction between prisoners and staff influences prisoner-staff relationships, but this depends on prisoners' perceptions of whether increased staff interaction improves their safety.

Factors that limit prisoner-staff interaction, such as high turnover, limited out of cell time and cell sharing, can negatively impact the quality and frequency of prisoner-staff interactions, as can the condition of prisoners' cells.

Interaction between prisoners and staff has been found to positively influence prisoner-staff relationships by providing opportunities to build rapport. Beijersbergen et al. (2014) found that prisoners living in prisons that had a higher prisoner-staff ratio and that were designed to encourage prisoner-staff interactions reported better relationships with staff. However, the impact of increased interaction between staff and prisoners on their relationships does depend on whether prisoners perceive this interaction to increase their safety or, by contrast, invade their privacy (Morin, 2016).

High **prison turnover** can negatively impact prisoner-staff relationships by making it difficult for staff to build rapport, establish supportive relationships, and identify prisoners at-risk of suicide (van Ginneken et al, 2017). Similarly, limited opportunities for interaction, such as restrictions on prisoner's out of cell time, can negatively impact prisoner-staff relationships by reducing opportunities to build positive relationships (HM Chief Inspector of Prisons for England and Wales, 2022). Interventions such as in-prison theatre programmes or therapeutic gardening programmes, aimed at supporting prisoners to develop their communication skills, empathy and awareness together, can improve prisoners' relationships with staff (Heard et al., 2013, Farrier & Baybutt, 2024).

Cell sharing can negatively impact prisoner-staff relationships by reducing opportunities for contact with prison staff, as prisoners may be less inclined to discuss issues in front of another prisoner (Molleman and van Ginneken, 2014). Conversely, **private spaces** within cells and prisoners' ability to lock their doors can foster trust and improve prisoner-staff relationships (Gronegras, 2019). The **condition** of prisoners' cells, such as level of noise and lighting, can also impact their relationship with staff (Engstrom and van Ginneken, 2022). This could be because noise makes it harder for prisoners and staff to communicate or due to the impact of the physical environment on prisoners' wellbeing and mood.

Findings from the qualitative data at HMP Liverpool

During the interviews and focus groups conducted in our evaluation, several prisoners (in refurbished and not-yet-refurbished wings) stated that more interaction with prison staff helped to build relationships, particularly where they felt they had things in common with staff. One member of staff stated that the **brightness** of the refurbished wing boosted their mood and improved their attitude, which made it easier for them to talk to prisoners. While these findings strongly support the finding from the literature that interactions between prisoners and staff improve relationships, it was not possible to evidence whether this has currently improved because of the refurbishment.

Monetising the potential impact of factors on health and wellbeing

The targeted literature review did not find any evidence that could be used to monetise factors impacting prisoner-staff relationships.

9. Conclusions and Lessons Learnt

9.1 Conclusions

This evaluation was comprised of two components: a process evaluation and an economic review. The process evaluation aimed to explore staff, SLT and prisoners' perceptions and experiences of the delivery and implementation of the refurbishment project at HMP Liverpool. The economic review aimed to strengthen the evidence base on the potential benefits of prison refurbishment and to test and validate the relevance and existence of key benefits at HMP Liverpool. It also aimed to monetise potential impacts where sufficient information existed. This section offers conclusions on the key themes explored in the report.

What were the perceived and potential benefits identified in the delivery and implementation of the refurbishment project?

Some staff highlighted improvements from the refurbishment that they felt supported more effective prison management, particularly the standardised cell layouts and the increased availability of single cells. The cleanliness and brightness of refurbished areas also improved feelings of wellbeing among some staff and prisoners. Security improvements had been delivered in the refurbished areas but, as they were not in place across the establishment, their potential benefits were not yet felt to be realised. Overall, the reported benefits of the refurbishment appeared relatively modest, which to some extent reflects the point in which the refurbishments are currently stalled. However, the delivery of the remaining refurbishment plans offers the potential to bring further benefits for staff and prisoners in HMP Liverpool.

What were the key challenges identified in the delivery and implementation of the refurbishment project at HMP Liverpool?

A range of delivery and implementation challenges were reported, several of which resulted directly from, or were compounded by, the pause in the refurbishment works. SLT and staff often felt that their input into the planning process was limited, which resulted in implementation issues that raised concerns around security, safety, functionality, and effective prison management. The continued closure of G Wing hindered movement across the prison and left staff in F Wing feeling physically isolated and less safe.

Several SLT, staff and prisoners also identified a current lack of spaces fit for meaningful engagement with staff and other prisoners, purposeful activities and calm relaxation. Moreover, while some improvements in accessibility were highlighted, gaps remained. In addition, some staff felt overlooked by the refurbishment and felt that their facilities – even in refurbished areas – were insufficient for supporting a pleasant working environment. Overall, concerns and frustrations somewhat dominated feedback from study participants about the refurbishment and overshadowed its perceived and potential benefits so far.

What have been the key trade-offs and unintended consequences of the refurbishments project?

Over the course of refurbishment delivery and implementation, those working and living in the prison identified ways in which the refurbishments were not working as intended or produced mixed results. While trade-offs are to some extent inevitable in the implementation of any refurbishment project, some staff reiterated the importance of consultation in planning to prevent or mitigate their negative impacts. Importantly, lessons learnt about unintended consequences, such as obstructed sightlines, were reported to have been applied in subsequent work at HMP Liverpool and refurbishment project at other prisons.

How do factors relating to the refurbishment of HMP Liverpool impact the key outcomes considered in the review?

The economic review identified complex interrelationships between refurbishment-related factors and outcomes. Existing evidence suggests that each factor may influence multiple outcomes, and in some cases, the outcomes themselves are interrelated. However, the literature does not offer a clear hierarchy or ranking of factors by their influence on

outcomes. The literature also highlighted that factors associated with the regime and management of the prison, such as time-in-cell, access to purposeful activity and presence of staff can be more impactful on prisoner outcomes than factors related to the design and physical conditions of the prison. Qualitative insights from prisoners at HMP Liverpool consistently pointed to the detrimental effects of prolonged in-cell confinement, limited access to purposeful activity, and insufficient visible staff presence. These factors were perceived to negatively affect all five outcomes of interest, suggesting that – at least in HMP Liverpool – these factors may be considered more impactful than others. This suggests that the changes intended as part of the refurbishment may be less impactful if not also accompanied by related changes to the regime and management of the prison.

While the literature frequently reports the adverse effects of prison crowding, it was not directly referenced by prisoners as affecting these outcomes. However, they described consequences commonly associated with overcrowding, such as reduced activity access, increased time locked in cells, and diminished staff interaction. Some participants acknowledged benefits of single cell occupancy, intended to reduce crowding, though such benefits may be constrained if other prison resources remain insufficient.

What evidence exists to support the monetisation of prisoner outcomes related to refurbishment?

The evidence suggested that there is potential value in improving some factors, particularly feelings of safety and boredom. However, only a limited number of studies provided quantitative estimates of the impact of specific factors, and none were based in prisons in England and Wales. No economic evaluations that monetised the impact of refurbishment-related factors on prisoner outcomes were identified; all quantitative studies relied solely on regression analysis to assess these effects.

9.2 Lessons Learnt

- 1) Maintain and strengthen effective processes for consultation and communication about refurbishments:**

Ensuring that SLT, staff and prisoners have opportunities to input meaningfully into the planning of the prison refurbishment will help ensure that the specific needs of staff and prisoners are identified and considered. It will also help to ensure that the specific constraints of the prison buildings and the context in which it is operating are well understood and taken into account in plans. Such consultation will also help staff and prisoners feel heard, to secure their buy-in to the refurbishments, and facilitate the effective operation of the prison during refurbishment delivery, which can often be challenging.

Similarly, maintaining timely, informative and proactive communication between the contractor, MoJ team and prison SLT and staff helps to minimise the disruption of prison operations during delivery and allow opportunities for feeding back learning that can improve ongoing work.

2) Ensure accessibility improvements, adapted to the prison, are incorporated in refurbishment planning:

Accessibility improvements in I and K Wings went beyond technical requirements to better address the needs of staff and prisoners and mitigate security and safety concerns around obstructed sightlines. Accessibility planning should include further consideration of the specific context and requirements of each prison, including potential security and safety concerns that may result from these improvements.

3) Prioritise improvements to and, if possible, expansion of communal spaces:

Communal spaces are essential for providing opportunities for staff and prisoners to engage meaningfully, build relationships and form communities – all cornerstones of the effective management of prisons and for supporting feelings of safety and wellbeing. While the refurbishment project at HMP Liverpool did not aim to increase social spaces, future prison refurbishments should prioritise improving and, if building layout and footprint allow, creating such spaces for prisoners to socialise, participate in purposeful activities and relax quietly with others.

Delivering clean, pleasant and functional staff areas should also be prioritised in refurbishments, as spaces for meeting and interacting and clean and well-maintained facilities, support productive working and staff morale and wellbeing.

4) Augment contingency planning for future major event such as contractor administration:

The risk of contractor administration continues to remain on project risk registers and will include having a developed contingency plan as part of standard planning requirements with contractors and Professional Service Partners, learning any applicable lessons.³⁶ It will also include plans for having commercial arrangements in place to be able to appoint suitably qualified teams that can deal with the issues that arise from a major contractor going into administration.

³⁶ Professional Service Partners are private organisations that work with MoJ to oversee contractor costs and timelines.

References

- Alves, S., Cabras, C., Bellini, D. and Bonaiuto, M. (2024) *Perceived Environmental Quality Indicators as Health-Enabling Elements Within Prisons*. Thousand Oaks: SAGE Publications. <https://journals.sagepub.com/doi/10.1177/00328855231222443> Accessed 22 July 2025
- Baggio, S., Gétaz, L., Tran, N.T., Peigné, N., Chacowry Pala, K., Golay, D., Heller, P., Bodenmann, P. and Wolff, H. (2018) *Association of Overcrowding and Turnover with Self-Harm in a Swiss Pre-Trial Prison*. Basel: MDPI. <https://pubmed.ncbi.nlm.nih.gov/29584625/> Accessed 22 July 2025
- Beard, J. (2023). *What is the Government doing to reduce pressure on prison capacity?* In: House of Commons Library. <https://commonslibrary.parliament.uk/what-is-the-government-doing-to-reduce-pressure-on-prison-capacity/> Accessed 22 July 2025.
- Beijersbergen, K.A., Dirkzwager, A.J.E., van der Laan, P.H. and Nieuwbeerta, P. (2014) *A Social Building? Prison Architecture and Staff–Prisoner Relationships*. Thousand Oaks: SAGE Publications. <https://journals.sagepub.com/doi/10.1177/0011128714530657> Accessed 22 July 2025
- Bierie, D.M. (2012) *Is Tougher Better? The Impact of Physical Prison Conditions on Inmate Violence*. Thousand Oaks: SAGE Publications. <https://journals.sagepub.com/doi/full/10.1177/0306624X11405157> Accessed 22 July 2025
- Bosma, A.Q., van Ginneken, E.F.J., Sentse, M. and Palmen, H. (2019) *Examining Prisoner Misconduct: A Multilevel Test Using Personal Characteristics, Prison Climate, and Prison Environment*. Thousand Oaks: SAGE Publications. <https://journals.sagepub.com/doi/10.1177/0011128719877347> Accessed 22 July 2025
- Canada, K., Barrenger, S., Bohrman, C., Banks, A. and Peketi, P. (2022) *Multi-Level Barriers to Prison Mental Health and Physical Health Care for Individuals With Mental Illnesses*. Lausanne: Frontiers Media. <https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsyt.2022.777124/full> Accessed 22 July 2025
- Cassiano, M.S., Ozturk, F. and Ricciardelli, R. (2021) *Fear of Infectious Diseases and Perceived Contagion Risk Count as an Occupational Health and Safety Hazard: Accounts from Correctional Officer Recruits in Canada*. Thousand Oaks: SAGE Publications. <https://journals.sagepub.com/doi/10.1177/26338076211058250> Accessed 22 July 2025
- Criminal Justice Alliance (2012) *Crowded Out? The Impact of Prison Overcrowding on Rehabilitation*. London: Criminal Justice Alliance. https://criminaljusticealliance.org/wp-content/uploads/Crowded_Out_CriminalJusticeAlliance.pdf Accessed 22 July 2025

Critical Appraisal Skills Programme (2023) *CASP Cross-Sectional Studies Checklist*. <https://casp-uk.net/casp-tools-checklists/cross-sectional-studies-checklist/> Accessed 22 July 2025

Critical Appraisal Skills Programme (2023) *CASP Qualitative Studies Checklist*. <https://casp-uk.net/casp-tools-checklists/qualitative-studies-checklist/> Accessed 22 July 2025

Critical Appraisal Skills Programme (2023) *CASP Systematic Review Checklist*. <http://casp-uk.net/casp-tools-checklists/systematic-review-checklist/> Accessed 22 July 2025

Dewa, L.H., Kyle, S.D., Hassan, L., Shaw, J. and Senior, J. (2015) *Prevalence, Associated Factors and Management of Insomnia in Prison Populations: An Integrative Review*. Amsterdam: Elsevier. <https://pubmed.ncbi.nlm.nih.gov/25644983/> Accessed 22 July 2025

Duke, K., Gleeson, H., MacGregor, S. and Thom, B. (2024) *The Risk Matrix: Drug-Related Deaths in Prisons in England and Wales, 2015–2020*. Chichester: Wiley. <https://pubmed.ncbi.nlm.nih.gov/36601729/> Accessed 22 July 2025

Elger, B.S. (2009) *Prison Life: Television, Sports, Work, Stress and Insomnia in a Remand Prison*. Amsterdam: Elsevier. <https://pubmed.ncbi.nlm.nih.gov/19201470/> Accessed 22 July 2025

Ellison, J.M., Cain, C.M., Baker, B. and Paige, B. (2022) *The Dangers of Short-Term Confinement: Indicators of Safety Risks Among Individuals in Jail*. Thousand Oaks: SAGE Publications. <https://pubmed.ncbi.nlm.nih.gov/35808834/> Accessed 22 July 2025

Engstrom, K.V. and van Ginneken, E.F.J.C. (2022) *Ethical Prison Architecture: A Systematic Literature Review of Prison Design Features Related to Wellbeing*. Thousand Oaks: SAGE Publications. doi:10.1177/12063312221104211 Accessed 22 July 2025

Farrier, A. and Baybutt, M. (2024) *Therapeutic Gardening in English Prisons Post-Pandemic: Implications for Health and Wellbeing*. Bingley: Emerald Publishing. <https://www.emerald.com/he/article/124/1-2/86/1225291/Therapeutic-gardening-in-English-prisons-post> Accessed 22 July 2025

Favril, L. and van Ginneken, E.F.J.C. (2023) *Individual and Environmental Contributors to Psychological Distress During Imprisonment*. Thousand Oaks: SAGE Publications. <https://journals.sagepub.com/doi/10.1177/14773708231201726> Accessed 22 July 2025

Fortescue, B., Fitzalan Howard, F., Howard, P., Kelly, G., & Elwan, M. (2021). Examining the impact of sanctions on custodial misconduct following disciplinary adjudications. London: Ministry of Justice. <https://assets.publishing.service.gov.uk/media/61af1a2f8fa8f5037ffaa272/examining-impact-sanctions-custodial-misconduct.pdf> Accessed 22 July 2025

- Grönegräs, M. (2019) *International Differences in Prison Architecture: What the United States Can Learn from Germany*. Maastricht: Maastricht University.
<https://openjournals.maastrichtuniversity.nl/Marble/article/view/741> Accessed 22 July 2025
- Guo, W., Cronk, R., Scherer, E., Oommen, R., Brogan, J., Sarr, M. and Bartram, J. (2019) *A Systematic Scoping Review of Environmental Health Conditions in Penal Institutions*. Amsterdam: Elsevier. <https://pubmed.ncbi.nlm.nih.gov/31078437/> Accessed 22 July 2025
- Heard, C. (2019) *Towards a Health-Informed Approach to Penal Reform? Evidence from Ten Countries*. London: Institute for Criminal Policy Research.
https://www.prisonstudies.org/sites/default/files/resources/downloads/icpr_prison_health_report.pdf Accessed 22 July 2025
- Heard, M.E., Mutch, A., Fitzgerald, L. and Pensalfini, R. (2013) *Shakespeare in Prison: Affecting Health and Wellbeing*. Bingley: Emerald Publishing.
<https://pubmed.ncbi.nlm.nih.gov/25764386/> Accessed 22 July 2025
- Heeks, M., Reed, S., Tafsiri, M., & Prince, S. (2018). *The economic and social costs of crime (2nd ed.)*. London: Home Office.
<https://assets.publishing.service.gov.uk/media/60094b86d3bf7f2ab1a1af96/the-economic-and-social-costs-of-crime-horr99.pdf> Accessed 22 July 2025
- HM Chief Inspector of Prisons for England and Wales (2022) *Annual Report 2021–22*. London: HM Inspectorate of Prisons.
<https://assets.publishing.service.gov.uk/media/62cc11a1d3bf7f2ff9806b1c/hmip-annual-report-2021-22.pdf> Accessed 22 July 2025
- HM Chief Inspector of Prisons. (2017). Report on an unannounced inspection of HMP Liverpool (4–15 September 2017).
https://hmiprisons.justiceinspectorates.gov.uk/hmipris_reports/hmp-liverpool/ Accessed 22 July 2025.
- HM Chief Inspector of Prisons. (2020). Report on an announced inspection of HMP Liverpool (27 August – 6 September 2019).
https://hmiprisons.justiceinspectorates.gov.uk/hmipris_reports/hmp-liverpool-2/ Accessed 22 July 2025.
- HM Chief Inspector of Prisons. (2022). Report on an unannounced inspection of HMP Liverpool (July 2022). https://hmiprisons.justiceinspectorates.gov.uk/hmipris_reports/hmp-liverpool/ Accessed 22 July 2025.
- HM Inspectorate of Prisons. (n.d.). Our research.
<https://hmiprisons.justiceinspectorates.gov.uk/our-research/> Accessed 22 July 2025.
- HM Prison and Probation Service. (2022). Prisoner Survey Methodology, Results and Analyses: HMP Liverpool. <https://www.gov.uk/government/publications/prisoner-survey-results-hmp-liverpool-july-2022> Accessed 22 July 2025.

- HM Treasury. (2021). *Wellbeing guidance for appraisal: Supplementary Green Book guidance*. London: HM Treasury. <https://www.gov.uk/government/publications/green-book-supplementary-guidance-wellbeing> Accessed 22 July 2025
- Huey, M.P. and McNulty, T.L. (2005) *Institutional Conditions and Prison Suicide: Conditional Effects of Deprivation and Overcrowding*. Thousand Oaks: SAGE Publications. <https://journals.sagepub.com/doi/10.1177/0032885505282258> Accessed 22 July 2025
- Kurzfeld, J. (2017) *Prison Crowding and Violent Misconduct*. Rochester: SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2994546 Accessed 22 July 2025
- MacDonald, M. (2018) *Overcrowding and its Impact on Prison Conditions and Health*. Bingley: Emerald Publishing. <https://pubmed.ncbi.nlm.nih.gov/29869586/> Accessed 22 July 2025
- McGuire, J. (2018) *Understanding Prison Violence: A Rapid Evidence Assessment*. London: HM Prison and Probation Service. <https://www.gov.uk/government/publications/understanding-prison-violence-a-rapid-evidence-assessment> Accessed 22 July 2025
- Ministry of Justice & National Offender Management Service. (2025). *Safety in custody statistics*. London: Ministry of Justice. <https://www.gov.uk/government/collections/safety-in-custody-statistics> Accessed 22 July 2025
- Ministry of Justice. (2024a). 10-Year Prison Capacity Strategy. Presented to Parliament by the Lord Chancellor and Secretary of State for Justice. https://assets.publishing.service.gov.uk/media/67586f828a1ef8f66413b9c2/24.231_MOJ_10-Year_Capacity_Strat_Pub_v10.1_WEB.pdf Accessed 22 July 2025.
- Ministry of Justice. (2024b, December 11). Thousands of new prison places to be built to keep streets safe. GOV.UK. <https://www.gov.uk/government/news/thousands-of-new-prison-places-to-be-built-to-keep-streets-safe> Accessed 22 July 2025.
- Ministry of Justice. (2025). *Offender management*. London: Ministry of Justice. <https://data.justice.gov.uk/prisons/offender-management> Accessed 22 July 2025
- Ministry of Justice. (2025b). *The impact of overcrowding on assaults in closed adult public prisons*. London: Ministry of Justice. <https://www.gov.uk/government/publications/the-impact-of-overcrowding-on-assaults-in-adult-public-prisons/the-impact-of-overcrowding-on-assaults-in-closed-adult-public-prisons>. Accessed 17 October 2025
- Molleman, T. and van Ginneken, E.F.J.C. (2014) *A Multilevel Analysis of the Relationship Between Cell Sharing, Staff-Prisoner Relationships, and Prisoners' Perceptions of Prison Quality*. Thousand Oaks: SAGE Publications. <https://pubmed.ncbi.nlm.nih.gov/24618876/> Accessed 22 July 2025
- Moran, D., Jones, P.I., Jordaan, J.A. and Porter, A.E. (2020) *Does Nature Contact in Prison Improve Well-Being? Mapping Land Cover to Identify the Effect of Greenspace on*

Self-Harm and Violence in Prisons in England and Wales. Thousand Oaks: SAGE Publications. DOI: 10.1080/24694452.2020.1850232 Accessed 22 July 2025

Moran, D., Jones, P.I., Jordaan, J.A. and Porter, A.E. (2021) *Nature Contact in the Carceral Workplace: Greenspace and Staff Sickness Absence in Prisons in England and Wales*. Thousand Oaks: SAGE Publications. DOI: 10.1177/00139165211014618 Accessed 22 July 2025

Morin, K.M. (2016) *The Late-Modern American Jail: Epistemologies of Space and Violence*. London: Wiley. <https://rgs-ibg.onlinelibrary.wiley.com/doi/full/10.1111/geoj.12121> Accessed 22 July 2025

National Audit Office (2005) *National Offender Management Service: Dealing with Increased Numbers in Custody*. London: National Audit Office. <https://www.nao.org.uk/reports/national-offender-management-service-dealing-with-increased-numbers-in-custody/> Accessed 22 July 2025

National Audit Office. (2020). *Improving the prison estate*. <https://www.nao.org.uk/wp-content/uploads/2020/02/Improving-the-prison-estate.pdf> Accessed 22 July 2025.

Office for National Statistics. (2025). *CPI Index 00: ALL ITEMS 2015=100*. London: Office for National Statistics. <https://www.ons.gov.uk/economy/inflationandpriceindices/timeseries/d7bt/mm23> Accessed 22 July 2025

Parkes, I. (2025). *Mapping functions for wellbeing measures to generate WELLBYs for use in economic evaluation*. London: Centre for Economic Performance. <https://cep.lse.ac.uk/NEW/publications/abstract.asp?index=11609> Accessed 22 July 2025

Ricciardelli, R. and Sit, V. (2015) *Producing Social (Dis)Order in Prison: The Effects of Administrative Controls on Prisoner-on-Prisoner Violence*. Thousand Oaks: SAGE Publications. <https://journals.sagepub.com/doi/10.1177/0032885515618362> Accessed 22 July 2025

Rocheleau, A.M. (2013) *An Empirical Exploration of the “Pains of Imprisonment” and the Level of Prison Misconduct and Violence*. Thousand Oaks: SAGE Publications. <https://journals.sagepub.com/doi/full/10.1177/0306624X19871633> Accessed 22 July 2025

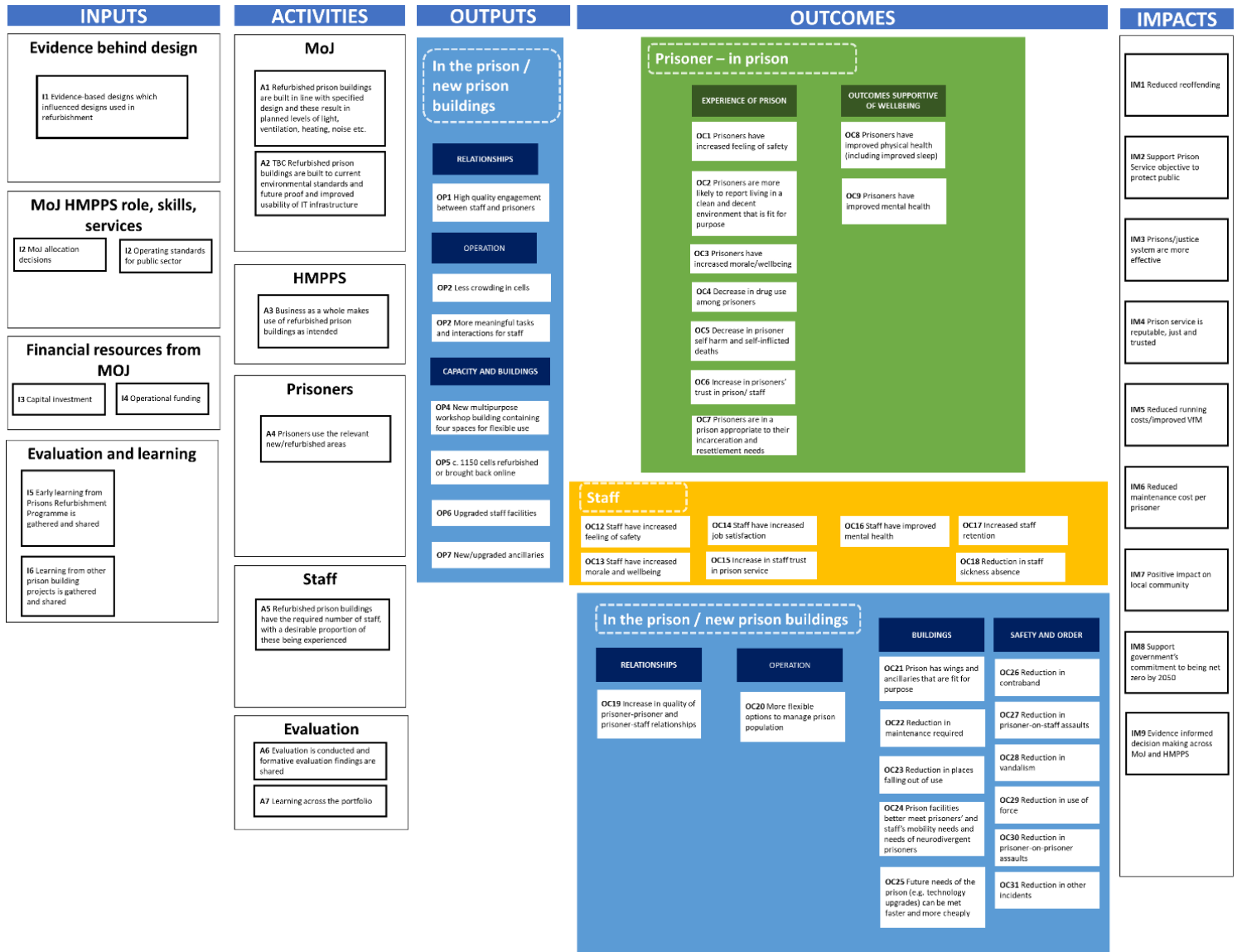
Ross, T., Bulla, J. and Fontao, M.I. (2022) *Space and Well-Being in High Security Environments*. Lausanne: Frontiers Media. <https://pubmed.ncbi.nlm.nih.gov/35711591/> Accessed 22 July 2025

Schultz, W.J., Bucerius, S.M. and Haggerty, K.D. (2024) *A Good Place to Do Time? Detailing the Construction of Symbolic Social Boundaries in Correctional Boot Camps*. Thousand Oaks: SAGE Publications. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10911968/> Accessed 22 July 2025

- Stephenson, T., Harris, I., Armstrong, C., Fazel, S., Short, R. and Blackwood, N. (2025) *Environmental Risk Factors for Self-Harm During Imprisonment: A Pilot Prospective Cohort Study*. San Francisco: Public Library of Science.
<https://pubmed.ncbi.nlm.nih.gov/39903794/> Accessed 22 July 2025
- Tabon, S. (2020). Do Better Prisons Reduce Recidivism? Evidence from a Prison Construction Program. EAFIT No. 20-09-2020.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3548045 Accessed 22 July 2025
- Turner, J., Ricciardelli, R. and Gacek, J. (2023) *The “Pains of Employment”? Connecting Air and Sound Quality to Correctional Officer Experiences of Health and Wellness in Prison Space*. Thousand Oaks: SAGE Publications.
<https://journals.sagepub.com/doi/full/10.1177/00328855231200635> Accessed 22 July 2025
- van Ginneken, E.F., Sutherland, A. and Molleman, T. (2017) *An Ecological Analysis of Prison Overcrowding and Suicide Rates in England and Wales, 2000–2014*. Amsterdam: Elsevier. <https://pubmed.ncbi.nlm.nih.gov/27189047/> Accessed 22 July 2025
- van Ginneken, E.F.J.C. (2022) *Is Cell Sharing Associated with Wellbeing, Misconduct and Prison Climate? Evidence from a Dutch Study*. Leiden: Brill.
https://brill.com/view/journals/eccl/30/1/article-p41_003.xml?language=en&srsId=AfmBOoqTRHjFRyk9tZniCP49SF_w-97BSTq5XIUJKo3ymKulqUMZoYr2 Accessed 22 July 2025
- Wener, R.E. (2012) *The Environmental Psychology of Prisons and Jails*. Cambridge: Cambridge University Press.
- Wener, R.E. and Keys, C. (1988) *The Effects of Changes in Jail Population Densities on Crowding, Sick Call, and Spatial Behavior*. Thousand Oaks: SAGE Publications.
<https://www.ojp.gov/ncjrs/virtual-library/abstracts/effects-changes-jail-population-densities-crowding-sick-call-and> Accessed 22 July 2025

Annex A: Theory of Change

Figure 2: Theory of Change logic model



Causal mechanisms: how the refurbishment project in HMP Liverpool will achieve its intended outcomes

These causal mechanisms were identified and discussed during a theory of change workshop with key stakeholders in February 2024. Causal mechanisms explain how and why the outputs and outcomes in the theory of change are expected to result from the inputs and activities. The causal mechanisms listed here relate only to the implementation of the Refurbishments Project in HMP Liverpool.

The refurbishments result in a prison that is brighter, cleaner, fit for purpose and a more pleasant environment to live and work in. This has positive psychological impacts on prisoners who feel ‘seen’ and valued by the investment made in improving the prison and have more pride in their environment. This is also associated with prisoners being less likely to be disruptive and broader improvements to discipline in the prison. For staff, the refurbishments lift morale and create increased satisfaction with their working environment. Furthermore, upgrades to facilities such as staff bathrooms improve staff productivity and quality of life.

The refurbishments address overcrowding and provide more space and privacy for prisoners. With more cells brought back into use, prisoners have their own cells, are more satisfied with their living conditions and experience more decency in their living conditions. This reduces stress and creates an environment that enables improved wellbeing.

The refurbishments allow staff to spend more time in meaningful, high-quality engagement with prisoners and enables relationship-building. Prior to the refurbishments, staff interactions with prisoners often focused on complaints about living conditions and maintenance issues. This reduced opportunities for high quality engagement between staff and prisoners and relationship satisfaction. With improvements to the prison, staff find their engagement with prisoners more rewarding and focused on supporting prisoners beyond just their basic needs.

The refurbishments ensures that the prison is better equipped to prevent distress and self-harm. As a Category B reception prison, HMP Liverpool houses prisoners on remand who may be especially vulnerable to mental health issues and acts of self-harm.

Through the refurbishments, the prison is better equipped to create a calmer environment in reception and physical changes to the cells reduce likelihood of self-harm and self-inflicted deaths.

The refurbishments facilitate a reduction in contraband in the prison. Improvements to security, such as the installation of new windows, target the drugs and other illicit items that may be in circulation. Reduction in contraband has knock-on effects outcomes for prisoners, staff and the prison itself, including increased feelings of safety, decreased drug use, improved physical and mental health for staff and prisoners, and reduced assaults, use of force and other incidents.

Annex B: Research Questions

The process evaluation was guided by ten research questions outlined below:

Process Evaluation Research Questions

1. Were there any challenges or facilitators in the delivery and implementation of the refurbishments and what, if any, were the implications of these (e.g., on timings, delivery, resources, people)?
2. How, if at all, has the refurbishment enabled prison management to more effectively manage the whole prison?
3. To what extent, and how, do staff use/operate in the refurbished spaces in their day-to-day practice?
4. How are staff experiencing the delivery and implementation of the refurbishments in the prison? What, if any, are the implications of the refurbishments on their day-to-day work? How does this compare with their experience elsewhere (e.g., on other wings)?
5. How and to what extent do prisoners use/inhabit refurbished spaces?
6. How are prisoners experiencing the delivery and implementation of refurbishments in the prison? What are the implications of the refurbishments on their day-to-day life? How does this compare with their experience elsewhere (e.g., on other wings)?
7. To what extent, if at all, and how, does the delivery and implementation of refurbishments affect prisoners' access to services and facilities?
8. How, if at all, does the delivery and implementation of refurbishments affect prisoner-prisoner and prisoner-staff relationships?

The economic review sought to answer the following three research questions:

Economic Review Research Questions

9. What benefits, at both prisoner and staff levels, are associated with prison refurbishment – specifically regarding key features such as light, cell sharing, anti-contraband measures and increased space?
10. To what extent do prisoners and staff at HMP Liverpool identify that five key potential benefits (health and well-being, violence, misconduct, feelings of safety and relationships with staff) have been realised within the refurbishment? Beyond these five benefits, are there any other benefits perceived by staff and prisoners to have been realised through the refurbishments?
11. Does the targeted literature review offers any insights on monetising benefits apart from those of mental health, wellbeing and assaults?

Annex C: Additional Detail on Research Methods

Recruitment

To recruit prison staff, SLT and prisoners to take part in the data collection, researchers liaised with prison management prior to the visit. Researchers requested interviews with six staff members working in refurbished and not-yet-refurbished areas of the prison, as well as members of the SLT. Across both rounds of fieldwork, requests were made to conduct an interview with the Governing Governor. In Round 1, requests were made to speak with the Head of Security, the Operations Governor and the Residential Governor. In Round 2, requests were made to speak to staff and SLT in Healthcare. For the remaining interviews, the two main factors guiding the recruitment of staff interviewees were their experiences working in refurbished and/or not-yet-refurbished wings and ensuring that a wide range of views were covered across the interviews.

Researchers asked prison management to approach a sample of prisoners living in either a refurbished or not-yet-refurbished wing of the prison to get a diverse array of lived experiences across the prison. Fieldworkers did not collect data on prisoner demographics to minimise the risk of identification. Consequently, we cannot report whether the interviewed prisoners were representative of the prison population. Prisoner recruitment was also dependent on availability and considered inter-prisoner conflict.

Staff/SLT interviews lasted on average 38 minutes, and the Governing Governor was interviewed in both rounds of data collection. All prisoners interviewed spoke with the fieldwork team prior to the commencement of the interview to build rapport and the interview ended when questions were complete, or the prisoner wanted to stop. Prisoner interviews lasted on average 18 minutes. Prisoner focus groups were attended by up to 6 prisoners and lasted on average 39 minutes.

Table 4: Study participants

	Interviews				Focus Groups	
	Prison staff	Prison SLT	MoJ	Prisoners	Prisoners on refurbished wings	Prisoners on not-yet-refurbished wings
Fieldwork Round 1	8	4	-	6	1 (6 participants) 1 (6 participants)	1 (6 participants)
Fieldwork Round 2	6	5	-	6	1 (6 participants) 1 (5 participants)	1 (5 participants)
Stakeholder interview	-	2	2	-	-	-
Total Participants	14	10	2	12	23	11

Analysis of Interviews and Focus Groups

To inform the analysis, interviews and focus group recordings were fully transcribed with all personally identifiable information redacted. Semi-structured field notes of the observations were synthesised and summarised by the fieldworkers for analysis. A thematic analysis was employed to organise and analyse the data, enabling the identification of recurring themes. A coding framework was developed based on the ten research questions to systematically code and analyse the data. This framework was updated and refined after round 1 of fieldwork, where additional questions were added to capture insights for the economic review. Themes were then drawn out within the refurbished and not-yet-refurbished wings across the prison.

Economic Review Methodology

RAND Europe jointly designed the economic review with MoJ to complement ongoing MoJ initiatives.³⁷ The economic review aimed to assess the benefits associated with the refurbishments project through four key components:

- Reviewing the benefits framework and a previous MoJ literature review
- Conducting a targeted literature review to strengthen the evidence base, particularly for factors relevant to refurbishment
- Gathering evidence to monetise the relationships identified in the targeted literature review, focusing on benefits most directly linked to factors affected by refurbishment
- Using data collected during fieldwork at HMP Liverpool to validate the presence and scale of the benefits, including input into data collection materials

Targeted Literature Review

The targeted literature review examined recent research on prison design features and their influence on outcomes for prisoners and staff. The review focused on factors relevant to the intended improvements at HMP Liverpool, such as improved heating, reduced damp, enlarged windows, better corridor lighting, and changes to cell sharing and crowding. The refurbishment is expected to increase operational capacity. Increased capacity may also ease staffing pressures, potentially enabling more frequent and improved prisoner-staff interactions. Additionally, the refurbishment is expected to foster better relationships between prisoners by creating a brighter, safer and calmer environment, and providing additional communal spaces.

This targeted literature review built upon MoJ's internal literature review, integrating its findings to present a more comprehensive, though not systematic, assessment of the literature. The review focused on literature published between 2014 and 2025 and aimed

³⁷ The initial economic evaluation relied on technical assumptions in the absence of an impact evaluation of the Refurbishment Programme. Due to data constraints, difficulties in identifying a counterfactual and challenges in isolating the intervention's effects from parallel programmes such as the SDS40 Early Release Scheme, MoJ decided to conduct an alternative approach. The research team suggested conducting a cost analysis using primary data collection. However, it was decided that this suggestion replicated similar internal MoJ efforts and so the proposed 'economic review' was the preferred approach.

to provide evidence for future economic evaluation studies within MoJ's Prison Capacity Sub-Portfolio. An iterative approach was used to identify relevant factors and outcomes, building on MoJ's review.

The research team designed search strings for the targeted literature review, informed by MoJ priority areas and the factors and outcomes identified in the internal review. In addition to updating MoJ's review, the team included research on:

- The quality of relationships between prisoners and between prisoners and staff;
- Purposeful activity, engagement and employment of prisoners; and,
- Prisoner and staff perceptions of safety.

Four search strings were developed in consultation with MoJ to cover these areas. Each was designed to identify literature relevant to prisons, prisoners or staff, the specified research area, and factors relevant to refurbishment, such as light, noise and cell sharing.³⁸ Searches were conducted in Academic Search Complete, Scopus and Web of Science. Results were sorted by relevance, and the first 50 results for each search string in each database were screened, yielding 600 abstracts in total. Inclusion and exclusion criteria were then applied as defined in the separate targeted literature review.

The team then prioritised abstracts focusing on factors most relevant to the refurbishment and populations similar to HMP Liverpool (i.e., adult male prisoners in Western countries³⁹). As Figure 3 details, this process produced 22 highly relevant articles, all assessed as high-quality using the Critical Appraisal Skills Programme (2023). Key findings from MoJ's previous literature review were also incorporated. Only two articles overlapped between MoJ's internal review and RAND's targeted literature review, likely due to differences in time period, geography, search strings and RAND's exclusive focus on peer-reviewed academic articles.

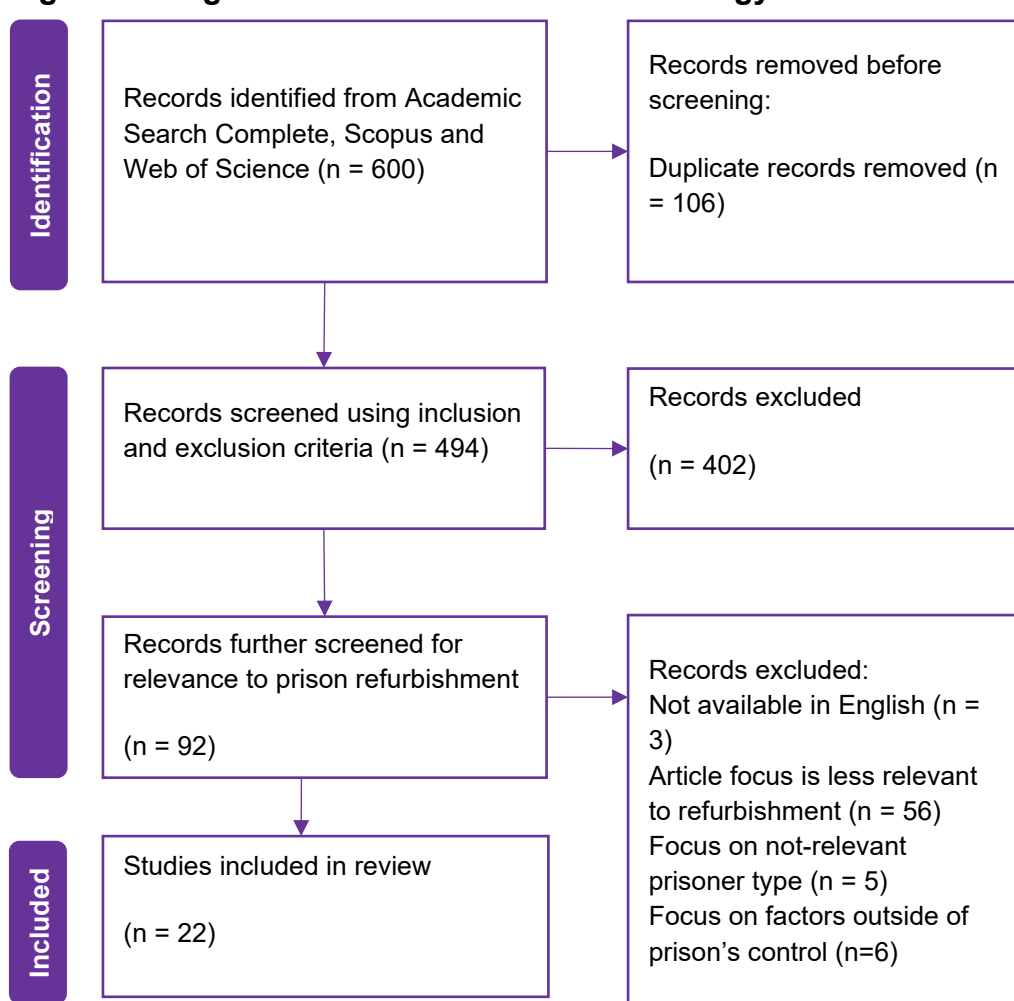
³⁸ The research team identified relevant factors from MoJ's internal literature review, which included factors less directly related to refurbishment such as prison size and layout.

³⁹ In this context, Western countries include the United Kingdom, United States, Canada, Australia, New Zealand and countries within the European Union.

This targeted literature review focuses on the benefits associated with prison refurbishment and is not intended to serve as a systematic review.

Preliminary findings from the targeted review were presented to MoJ to inform the prioritisation of outcomes for the economic review. MoJ requested to focus on outcomes with the strongest evidence base: health and wellbeing, violence, misconduct, relationships with staff, and feelings of safety.

Figure 3. Targeted Literature Review Methodology



Validation

The research team used findings from the interview and focus group data to validate and contextualise the pathways and relationships identified in the targeted literature review.

The research team first familiarised themselves with the qualitative data, then systematically reviewed transcripts from each interview and focus group to identify

relevant quotations or sections that indicated the presence of any of the pathways or relationships highlighted in the literature. This approach enabled the team to triangulate evidence from the literature with lived experiences and perceptions within HMP Liverpool. As the interviews and focus groups followed a semi-structured approach, the absence of data validating a relationship does not mean that the pathway does not occur within HMP Liverpool but may indicate that it is not as significant in impacting prisoners' or staff's experiences. Also, in this part of the analysis the team only looked for data relating to the five outcomes of interest – there may be pathways between refurbishment-relevant factors and other outcomes at HMP Liverpool which were not picked up here.

Monetisation

To monetise relevant outcomes, the research team applied a structured approach for each outcome area, drawing on relevant statistics from regression tables in the literature, unit cost datasets, and established economic valuation methods.

For health and wellbeing outcome, the team extracted regression coefficients to estimate the change in GHQ-12 (General Health Questionnaire) scores associated with a one per cent change in each relevant factor. They then used existing mapping techniques to translate changes in GHQ-12 scores into changes in WELLBY (Wellbeing-Adjusted Life Years), following the methodology outlined by Parkes (2025), which equates to a 1 unit increase in GHQ-12 scores to 0.21 decrease in WELLBY. The monetary value of these changes was estimated using HM Treasury guidance, which assigns a value of £13,000 to one WELLBY (in 2021 prices).

For violence, regression coefficients were used to estimate the change in the number of assaults or the probability of violent incidents resulting from a one per cent change in each factor. Baseline risks for both serious and non-serious violent incidents were calculated using data from the Safety in Custody statistics (Ministry of Justice & National Offender Management Service, 2025). The team then applied the estimated percentage change in outcomes to determine the change in the number of assaults. The economic value of these changes was calculated using cost estimates for violence with injury and violence without injury, as provided in the Cost of Crime framework (Heeks et al., 2018).

For misconduct, the team extracted regression coefficients to estimate the change in the probability of misconduct for a one per cent change in each factor. Baseline numbers of misconduct incidents were taken from Fortescue et al. (2021) and MoJ (2025). The estimated percentage change was then applied to calculate the change in the number of misconduct incidents. The value of these changes was estimated using the Cost of Crime figures for theft from the person (Heeks et al., 2018).

This approach enabled the research team to provide robust, evidence-based estimates of the potential economic benefits associated with improvements in key factors targeted by the refurbishment project.

Additional Diagrams with Overview of Literature Review

These diagrams provide an overview the relationship between factors and outcomes within the identified literature. Solid lines connecting factors and outcomes indicate evidence found by the research team of a relationship within the targeted literature review. However, as noted by the lines on the left- and right-hand side of the diagrams, some factors have been found to influence other factors (for example, the level of crowding can influence purposeful activity) and sometimes outcomes may play an intermediary role between factors and other outcomes (for example, the level of violence within the prison impacts prisoner's feelings of safety). These diagrams aim to provide readers with an overview of the relevant relationships, which are explored in greater detail in the Section 8. The labels above the connecting lines indicate the sources supporting each relationship. The diagrams use colour to group the factors into six themes: physical environment, crowding, cell environment (includes cell sharing and time in cell), purposeful activity, relationships with prisoners and interactions with staff. This is designed to make the diagram easier to read.

Figure 4. Relationship between factors and health and wellbeing outcome

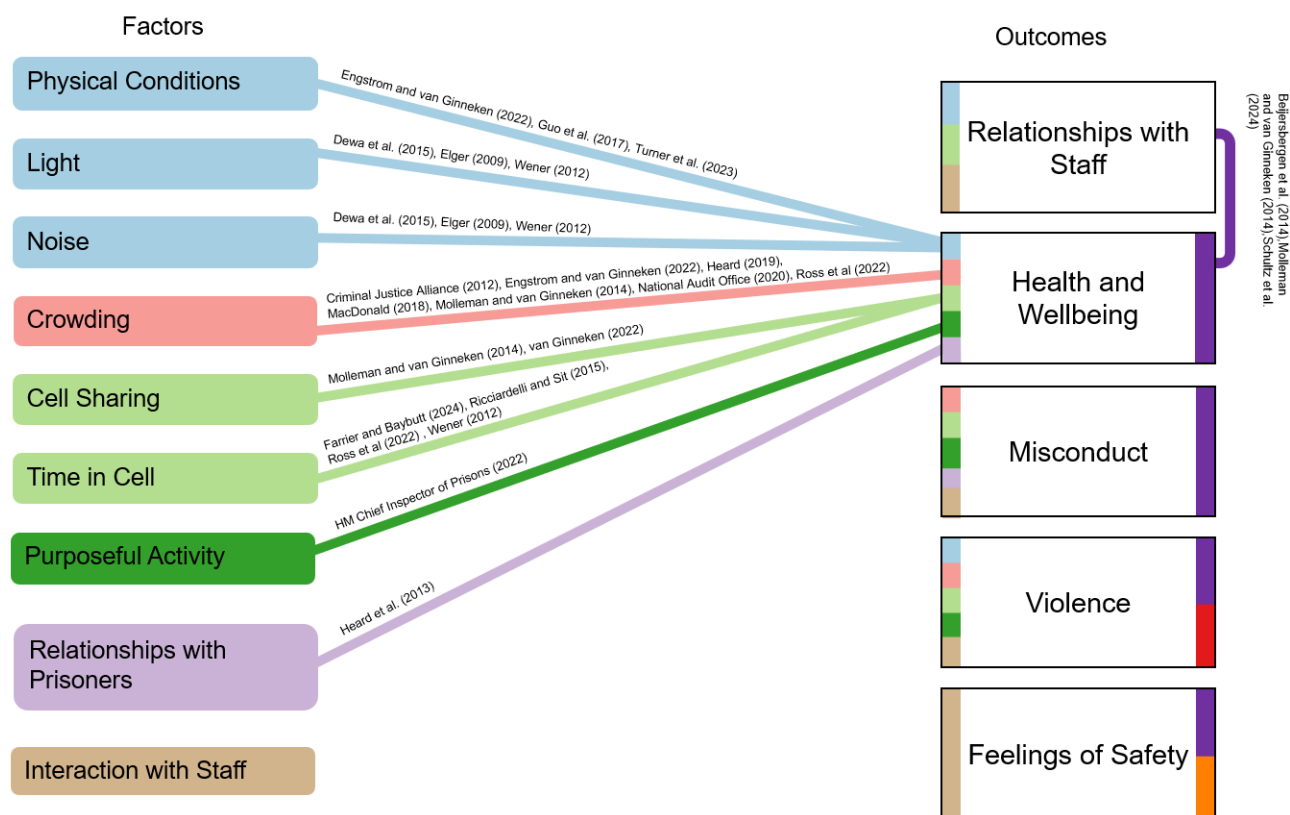


Figure 5. Relationship between factors and violence

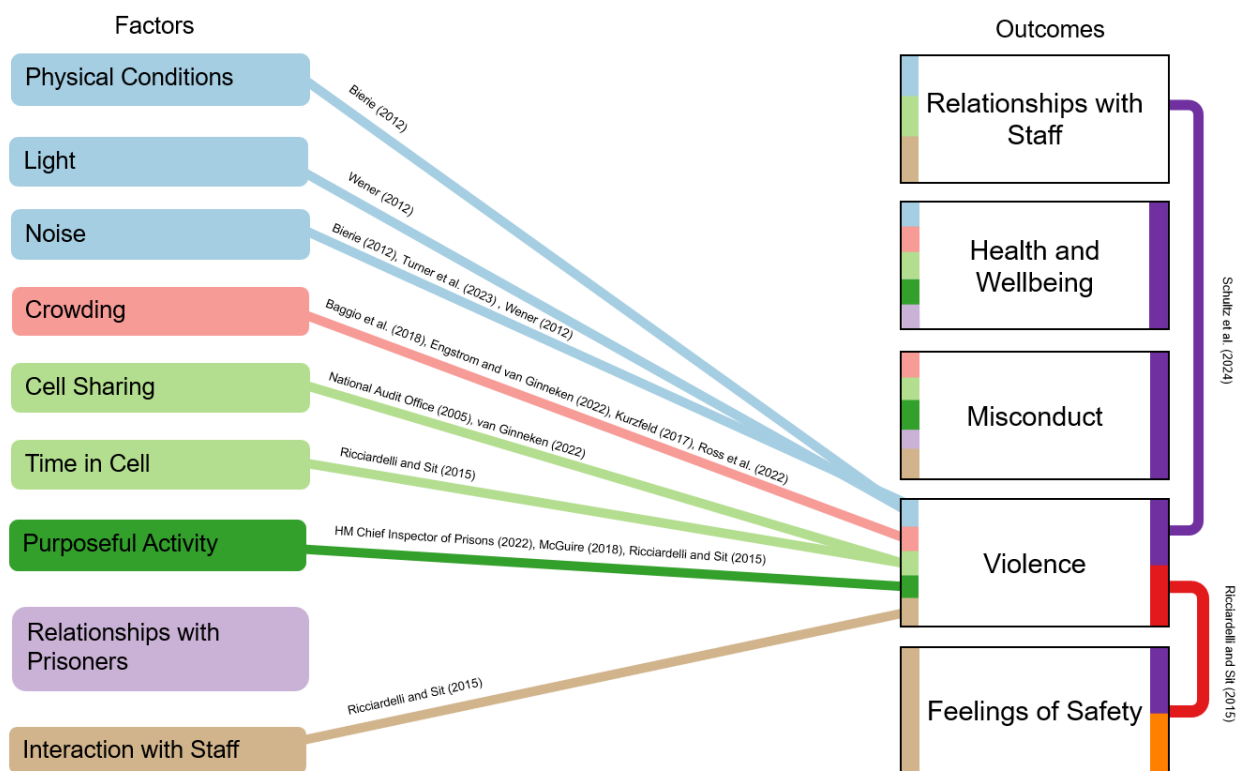


Figure 6. Relationship between factors and misconduct

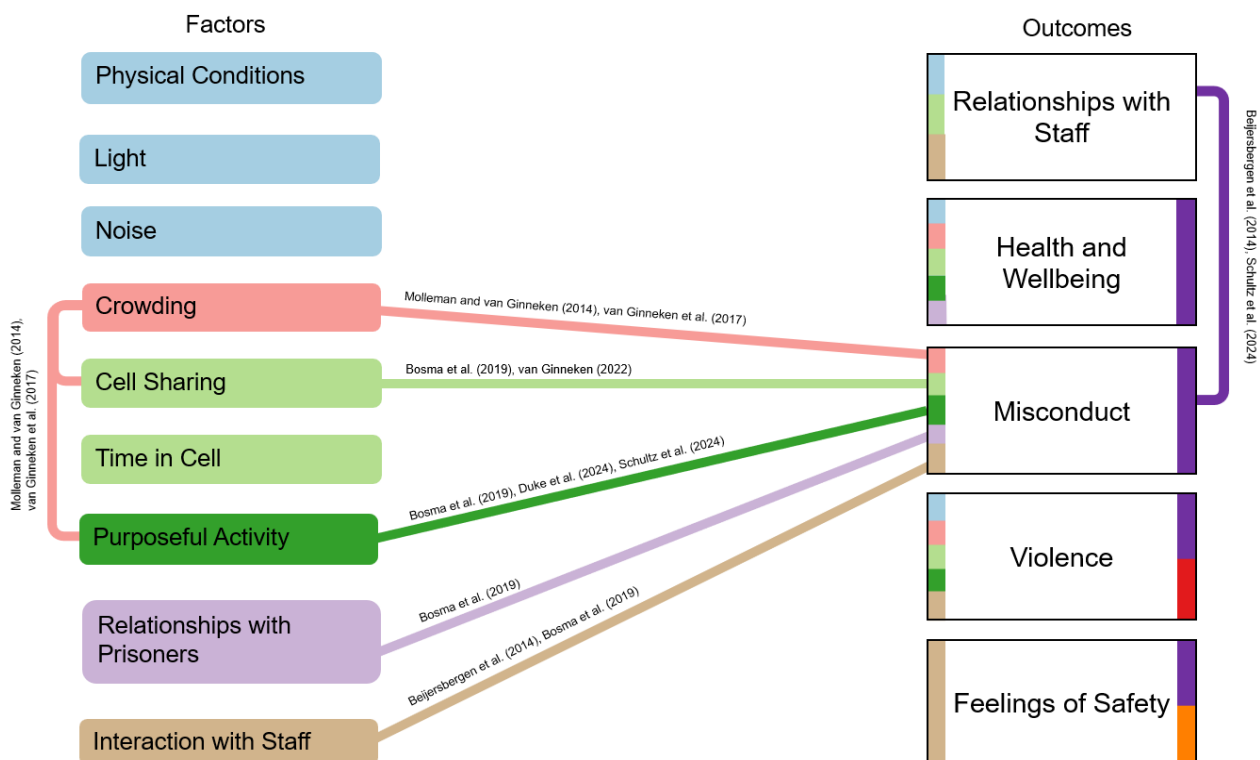


Figure 7. Relationship between factors and relationships with staff

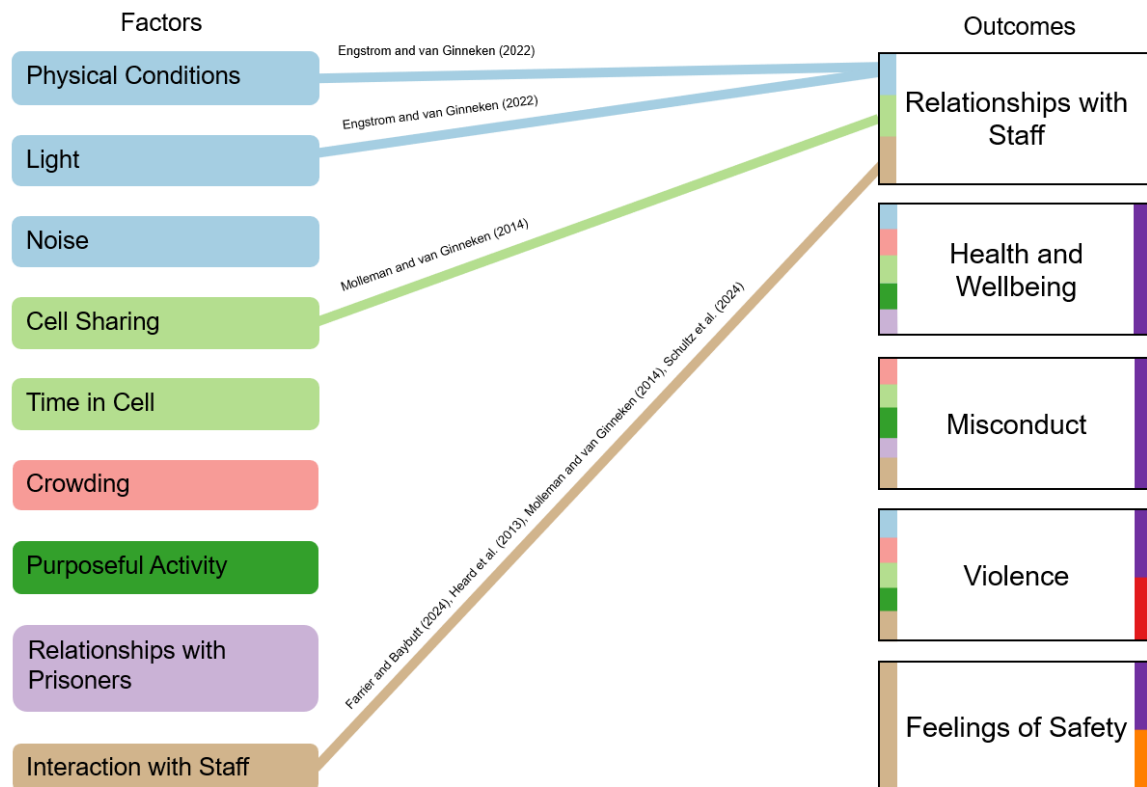


Figure 8. Relationship between factors and feelings of safety

Targeted Literature Review Search Strings

The research team aimed to identify relevant literature published between 2014 and 2025 on prisoner outcomes related to the three benefit categories not previously included (purposeful activity, perceptions of safety and quality of relationships). Additionally, the team aimed to expand the existing literature review on previously identified benefits, as shared by MoJ, by using a fourth search string to capture new publications from 2022 to 2025 and identify any gaps from publications published between 2014 and 2022.

The research team searched three databases:

- Academic Search Complete
- Scopus
- Web of Science

For each database, the research team screened the first 50 new results for each search string (i.e. around 150 for each search string) and extract relevant sources within each. We kept a record of all articles identified as relevant using the inclusion/exclusion criteria.

This is a targeted literature review focusing on the benefits associated with prison refurbishment and is not intended to serve as a systematic review of the literature.

Table 5: Targeted Literature Review Inclusion and Exclusion Criteria

Category	Include	Exclude
Timeframe	Results published between 01/01/2014 and 28/2/2025	Results published prior to 01/01/2014
Language	Results published in English	Results not published in English
Geography	Results where the country/region of focus is the UK, Europe, the United States of America, Canada or Australia (or any sub-geography within) or systematic reviews that include results from these countries	Results from other countries/regions
Age of Prisoners		Exclude results focusing on youth prisoners (prisoners under 18 years of age)
Facility Type	Prisons	Exclude results focusing on secure (mental) health facilities or secure immigration facilities

Research Focus	Include all research relating to the following within prisons:	Exclude research focusing exclusively on:
	Factors affecting or outcomes resulting from engagement in purposeful activities/productivity/engagement with programmes.	Impacts of race/ethnicity on experiences within prison if it does not include a relevant outcome.
	Factors affecting or outcomes resulting from prisoners or staff's perceptions of safety (physical safety, mental safety, health safety).	Relationships between prison staff (that do not include prisoners).
	Factors affecting or outcomes resulting from the quality of relationships between prisoners and between prisoners and staff.	Experiences of pregnancy or abortion while incarcerated.
	Factors affecting or outcomes relating to rehabilitation, recidivism and resocialisation.	The impact of pre-incarceration experiences on prisoner (mental) health or behaviour.
	Factors affecting or outcomes relating to drug/substance abuse.	Research focusing exclusively on individuals who have been released from prison.
	Factors affecting or outcomes relating to violence or physical/sexual assault.	
	Factors affecting or outcomes relating to self-harm, suicide or mortality.	
	Factors affecting or outcomes relating to physical or mental health and wellbeing.	

	Factors affecting or outcomes relating to mood, concentration, stress, boredom and peace. Factors affecting or outcomes relating to misconduct or other positive/negative behaviours.	
Previous MoJ work	Research outputs not covered in the bibliography shared by MoJ	Research outputs already covered in the bibliography shared by MoJ
Type of publication	Peer reviewed articles	Grey literature

Quality assurance

This study was subject to RAND Europe's full quality assurance (QA) procedures. The QA process took place throughout the length of the project, to ensure the smooth running of the project. RAND Europe defines ten quality assurance standards, which are set out below. As part of the quality review process, the reviewers scored each of the ten standards on a scale of 1 to 6 and a report must score at least 4 against all scored criteria by all reviewers to be approved for publication.

For this project, the QA process entailed:

- Continuous review throughout the study: The research was subject to review and challenge at key points by one of the appointed reviewers. Continuous review points would include draft research plans; all data collection tools; ethics applications; and pre and post important fieldwork activities. The aim of the continuous review was to ensure the evaluation design is robust.

- Review of final reports against the RAND Europe quality standards: The final report was subject to review in accordance with RAND Europe's quality assurance standards by two reviewers. The reviewers assessed the final report against 10 standards and provided constructive suggestions for improvement where any of the standards are not met.

Ethics and data protection

Ethics

RAND Europe conducted this study in line with its principles for good ethical research. The project was formally reviewed by MoJ, and advice was sought from RAND Europe's Research Ethics Committee and RAND Europe's Data Protection Officer.

Safeguarding measures for participants

All participants invited to take part in the interviews and focus groups were given an information sheet, a consent form, a privacy notice, and a form that they could complete to opt out of the study if they changed their mind about taking part.

The information sheets, consent forms, and privacy notices were printed by the fieldworkers and handed out to prisoner and staff participants prior to commencing the interview. Before conducting interviews or focus groups, fieldworkers ensured that the participants understood the contents of the documents, in particular why the interviews and focus groups were carried out and how their personal data would be used, stored, and destroyed. The fieldworkers allowed time for participants to read the documents and, if needed, talked through the information with them. Fieldworkers were available to answer questions regarding the study and the use of the data collected before conducting the interview. Prior to beginning the interviews and focus groups, the participants signed a consent form agreeing to their participation.

All participants were informed that interviews and focus groups would be confidential, barring serious safety concerns or breaches. Participants were told that remarks about drug consumption in prisons generally would be confidential, but specific information (such

as people involved in supplying drugs or times of drug dealing/entry) would not be confidential. If a participant revealed information that was exempt from confidentiality, researchers would notify the participant that the information would be passed to the Local Prison Lead, and the interview would be terminated. If the interview/focus group was terminated, the recording would be deleted and not transcribed, however, this did not occur.

It was considered possible that, for some prisoner participants, discussing their experiences of living in a prison would be upsetting. As a result, the consent form outlined which members of staff to contact in case of distress and this information was verbally reiterated by fieldworkers at the beginning of the interviews and focus groups.

Posters were sent to the prison prior to each fieldwork visit to raise awareness of the study and data collection activities taking place. Informed consent was not sought from the individuals observed during the observations, since there were minimal risks associated with participation, no personal information was collected, and to seek consent would interfere with the natural behaviours the research team were seeking to observe. However, the fieldworkers ensured that all parties being observed were aware of the identity and presence of the fieldworkers. If anyone expressed confusion or discomfort, they had the possibility to ask questions about the study. There was no evidence of such a response; the arrival of the fieldworkers on a wing provoked reactions ranging from indifference to interest from prisoners and staff.

Finally, participants were given an 'opt-out' form which, if completed, would allow them to withdraw themselves and all their data from the study. If a focus group participant withdrew from the study, only the information they provided would be excluded. Prison staff and prisoners were told that they could withdraw their participation at any stage of the study up until the analysis stage. No participants chose to opt out of the study.

Safeguarding measures for researchers

Prior to each visit, researchers discussed with prison management the plans to safeguard the fieldworkers conducting the data collection during their visits. All fieldworkers involved were experienced in conducting research with prisoners, prison staff and within a prison

setting. All fieldworkers were escorted to interviews and workspaces by prison staff. The fieldworkers debriefed after interviews and focus groups and provided support to each other support when distressing topics or interviews arose.

Data protection

A Data Safeguarding and Management Plan covering data security, confidentiality, data transmittal, data storage and destruction, procedure for notifying a security breach, and our specific approach to data management and security for this study was completed. We also completed a Data Protection Impact Assessment to share with the Data Protection Officer at RAND Europe.