

## 2023 CPA Workspace Ratios

### Introduction

Workspace ratios are used by strategists, planners, and assessors to understand how many job positions on a full-time basis (FTE) may be enabled by a prospective development or a plan at capacity.

Accurate information on workspace ratios is difficult to acquire quickly and must be obtained from a range of sources. Also, different sources vary considerably by land use and regional coverage. The 2023 set of common planning assumptions (CPA) for workspace ratios aims to deliver a set of benchmarks for workspace ratio to enable consistency in strategy planning and assessments in NSW.

### 2023 Common Planning Assumptions

**Table 1** presents the 2023 set of common planning assumptions (CPA) for workspace ratios. This set replaces the workspace ratios that were developed by Landcom in 2018. The 2023 CPA workspace ratios apply to a wider range of land uses than the 2018 CPA set. The broader scope of land uses reflects the range of activities that non-residential and mixed residential development applications involve across the 6 cities region defined by the Greater Cities Commission (GCC).

**Table 1** includes a **single guidance value** as well as a **range for permissible workspace ratios** for each land use. Users will generally apply the single value given in the 2023 guidance. However, a user may apply a different value if region-specific information suggests otherwise as long as the chosen value lies within the range specified in the 2023 CPAG set.

The updated workspace ratios were developed by a whole-of-Government Jobs Forecasting Metric Working Group (JFMWG). The JFMWG was set up under the umbrella of the Economy and Employment Technical Working Group (EETSG) of the Common Planning Assumptions Group (CPAG). JFMWG membership included specialists in NSW agencies that rely on the job metrics and employment projections for NSW government proposals, business plans and strategies.

The 2023 CPA set of workspace ratios were endorsed to be included in the Common Planning Assumptions Workbook by CPAG out of session on Friday 1<sup>st</sup> September 2023.

### Method

Desktop research focussed on collating three sources for data on workspace ratios.

1. Actual workspace ratios estimated since 2018 by consultants or Census/Surveys,
2. Derived workspace ratios using data from a range of sources such as the ABS and Australian Institute of Health and Welfare,
3. Derived workspace ratios using professional judgement for land uses where workspace ratio data was not available.

Table 1 - 2023 CPAG workspace ratios –guidance and ranges

Land Use	Unit	CPAG Workspace Ratio	
	Per FTE job position	2023 Guidance	2023 Range
<b>Office Premises</b>			
Office within 10 mins of a transport hub	m <sup>2</sup> GFA	15	10 to 20
Office outside 10 minutes of a transport hub	m <sup>2</sup> GFA	20	15 to 35
Productivity Support (E3/SP4)	m <sup>2</sup> GFA	35	25 to 45
Call centre	m <sup>2</sup> GFA	12	10 to 25
<b>Retail Premises</b>			
Shops and cafes	m <sup>2</sup> GFA	35	30 to 40
Department stores	m <sup>2</sup> GFA	55	45 to 65
Large format retail	m <sup>2</sup> GFA	70	45 to 100
Retail services	m <sup>2</sup> GFA	80	50 to 120
<b>Industrial Premises</b>			
Traditional manufacturing	m <sup>2</sup> GFA	100	50 to 200
Advanced manufacturing	m <sup>2</sup> GFA	200	150 to 300
High-technology Park	m <sup>2</sup> GFA	80	60 to 100
Warehouse, transport, and storage	m <sup>2</sup> site area <sup>1</sup>	150m <sup>2</sup> or 50 jobs/ha	50 to 300
Data centres	m <sup>2</sup> GFA	200	100 to 400
<b>Health Premises</b>			
Hospital	m <sup>2</sup> GFA	20 m <sup>2</sup> or 0.157 beds	15 to 25
Medical Centres	m <sup>2</sup> GFA	32	25 to 45
<b>Education Premises</b>			
Primary school	students	15	14 to 16
High school	students	12	10 to 13
University and TAFE	m <sup>2</sup> GFA	100	40 to 100
<b>Community and Cultural Premises</b>			
Childcare centre	m <sup>2</sup> GFA	35 or 0.154 children	30 to 40
Community Centre	m <sup>2</sup> GFA	35	30 to 40
Fitness centre	m <sup>2</sup> GFA	100	80 to 120

Land Use	Unit	CPAG Workspace Ratio	
	Per FTE job position	2023 Guidance	2023 Range
Tourism and culture	m <sup>2</sup> GFA	125	90 to 300
Sports and recreation	m <sup>2</sup> GFA	225	130 to 250
Prisons	prisoners	2.2	2.2 to 2.4
<b>Accommodation Premises</b>			
Hotel Premises	m <sup>2</sup> GFA	100 m <sup>2</sup> or 4 rooms	100 to 525 m <sup>2</sup> or 4 to 15 rooms
Serviced Apartments	m <sup>2</sup> GFA	500 m <sup>2</sup> or 10 apartments	200 to 1400 m <sup>2</sup> or 4 to 20 apartments
Student Accommodation	m <sup>2</sup> GFA	500 m <sup>2</sup> or 20 rooms	400 to 1400 m <sup>2</sup> or 16 to 56 rooms
Aged Care	residents	2.25 residents	n.a.
Retirement Home	m <sup>2</sup> GFA	380 m <sup>2</sup> or 8 apartments	220 to 460 m <sup>2</sup> or 4 to 9 apartments
<b>Defence and Aerospace</b>			
<b>Aviation Facilities</b>			
Aviation Facilities	ha	80 jobs/ha	70 to 90
<b>Intermodal Facilities</b>			
Intermodal Facilities	ha	30 jobs/ha	20 to 40

Notes: n.a. Not available. m<sup>2</sup> square metre. ha hectare.

FTE is full-time equivalents.

GFA is gross floor area and means the sum of the floor area of each floor of a building measured from the internal face of external walls, or from the internal face of walls separating the building from any other building, measured at a height of 1.4 metres above the floor.

Site Area is the area of any land on which development is or is to be carried out. The land may include the whole or part of one lot, or more than one lot if they are contiguous to each other.

## Data sources

The sources listed below are used to derive the 2023 CPAG workspace ratios. **Table 2** notes how these sources are used to develop benchmarks and ranges for the workspace ratios.

**Robust** estimates of workspace ratios are obtained from a census or survey from two high-job density council areas:

- City of Sydney Survey (2017) - Floor space and employment survey.
- City of Melbourne Census (2022) - Census of land use and employment.

**Reasonable** estimates of workspace ratios can be obtained from consultants providing job impact assessments for projects and strategic plans on behalf of NSW Government agencies. The consultants apply a range of approaches to several data sources to develop workspace ratios.

Reports include:

- Cox Consulting and JLL (2023).
- Mecone (2021) - Parramatta Light Rail Stage 2, Land Use Analysis Background Report. Prepared for Transport for NSW.
- Urbis (2021) - Department of Planning and Environment (DPE) Employment Land Strategy Guidelines on Employment Densities Analysis.

The range for office-related land uses used this source:

- Commercial Real Estate (2019) - How much office space do I need?  
<https://www.commercialrealestate.com.au/advice/how-much-office-space-do-i-need-57459/>

Health and education workspace ratios are based on data available from:

- ABS (2023) - Schools, 2022, Catalogue No. 4390.0, Table 53a.
- Australian Institute of Health and Welfare (2023) - Hospital Workforce, tables 3.2 and 4.6.
- Australian Children's Education and Care Quality Authority (2023) - National Quality Framework, <https://www.acecqa.gov.au/nqf/educator-to-child-ratios>.

Corrective services workspace ratios are based on:

- ABS (2022) - 2021 Census (disaggregated by 4-digit ANZSCO Occupation by State), <https://www.abs.gov.au/statistics/microdata-tablebuilder>.
- Productivity Commission (2022) - Report on Government Services 2022, <https://www.pc.gov.au/ongoing/report-on-government-services/2022/justice/corrective-services>.

Aged care workspace ratios are based on:

- Department of Health and Aged Care (2023) - Aged care reform roadmap, <https://www.health.gov.au/our-work/aged-care-reforms/roadmap>.

The remaining workspace ratio estimates were based on desktop research by the department or left unchanged as the original Landcom estimate:

- DPE (2021) - Desk-top research for 2022 Release of Sydney Jobs Supply Forecasts.
- Landcom (2018) - Common Planning Assumptions, Workspace Ratios.

## Key trends in workspace ratios

Workspace ratios in the office, industrial, retail and health industries have trended downwards since the early 2000s (City of Melbourne Census 2022).

- The downward trend in workspace ratios in the office-based industries are mainly due to space-saving work practices such as hot-desking, activity based work and agile working.
- Workspace ratios in the industrial, retail and health-based industries have also trended downwards due to automation, new ways of working and improved communications technology.

The long run trend decline in workspace ratios was disrupted by COVID-19 and a consensus is yet to be formed on what workspace ratios will be in the post-COVID world. However, limited evidence is available via the annual Melbourne Census for Land Use and Employment, which suggests that workspace ratios since 2020 have:

- stabilised in the office, retail, and health industries,
- increased in logistics, education, and the hospitality industries, and
- resumed their decline in the manufacturing and the utility industries.

## Consequences for infrastructure planning and requirements

Workspace ratios enable strategic planners to optimize space usage, allocate resources effectively, comply with safety regulations, and prepare for future growth.

- *Office, retail, and health* - stable workspace ratios suggest little change in infrastructure requirements. However, other factors such as remote working and digital technologies in these industries are driving bigger changes in infrastructure requirements, mainly away from Central Business Districts towards strategic centres and residential areas.
- *Logistics, education, aged care and hospitality* - higher workspace ratios may drive a greater requirement for infrastructure related to these industries, particularly in the non-CBD areas.
- *Manufacturing and utilities* - the continued decline of workspace ratios mean that more efficient, cost-effective, and user-friendly infrastructure solutions for workers will gain higher priority.

Table 2 - Sources and notes on the 2023 CPAG workspace ratio guidance and ranges

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
<b>Office Premises</b>				
Office within 10 minutes of a transport hub	m <sup>2</sup> GFA	15	10 to 20	<p>Office premises include buildings or places used for the purpose of administrative, clerical, technical, professional, or similar activities that do not include dealing with members of the public at the building or place on a direct and regular basis.</p> <p>The results of the City of Sydney Survey (2017) are little different to the Landcom (2018) guidance of <b>15 m<sup>2</sup></b>.</p> <p>At the low end of the range, Commercialrealestate.com.au (2019) report that Knight Frank suggests office space ratios of <b>8 m<sup>2</sup> to 15 m<sup>2</sup></b> GFA per employed person are typical.</p> <p>On the other hand, City of Sydney Survey (2017) estimates a range <b>15 m<sup>2</sup> to 18 m<sup>2</sup></b> GFA for CBD with government administration recording a high of <b>28 m<sup>2</sup></b> GFA per employed person.</p> <p>A narrower range of <b>10 m<sup>2</sup> to 20 m<sup>2</sup></b> is defined because the low estimate of <b>8 m<sup>2</sup></b> reigned pre-Covid 19 and the high estimate of <b>28 m<sup>2</sup></b> relates to density within a small number of government buildings in the CBD area.</p>
Office outside 10 minutes of a transport hub	m <sup>2</sup> GFA	20	15 to 35	<p>No revision because the results of the City of Sydney Survey (2017) survey results are little different to the Landcom (2018) guidance of <b>20 m<sup>2</sup></b>.</p> <p>The <b>15 m<sup>2</sup> to 35 m<sup>2</sup></b> range is based on the City of Sydney Survey (2017) estimates of a range <b>24 m<sup>2</sup> to 33 m<sup>2</sup></b> for non-CBD office but with the lower bound set marginally below the 2023 guidance based on professional judgement.</p> <p>Urbis (2021) and Mecone (2021) estimate <b>39 m<sup>2</sup></b> and <b>45 m<sup>2</sup></b> respectively at the upper end of office-related developments. Professional judgement is applied to reject the very high Urbis and Mecone estimates that relates more to business park office developments in Productivity Support zoned areas.</p>

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
Productivity Support (E3/SP4)	m <sup>2</sup> GFA	35	25 to 45	<p>Productivity Support zoned areas (business parks) are included as a new land use for workspace ratio estimation for instances where business mix is highly uncertain at the concept stage.</p> <p>The 2023 guidance of <b>35m<sup>2</sup></b> is based on the Cox Consulting and JLL (2023) suggestion of <b>32 m<sup>2</sup></b> for Business Park. Urbis (2021) estimate <b>39 m<sup>2</sup></b> for outer Metropolitan Sydney areas.</p> <p>The lower end of the range reflects City of Sydney Survey (2017) estimates for a range <b>24 m<sup>2</sup> to 33 m<sup>2</sup></b> for non-CBD office.</p> <p>The upper end of the range reflects Mecone (2021) estimate of <b>45 m<sup>2</sup></b> for ELDM lands.</p>
Call centre	m <sup>2</sup> GFA	12	10 to 25	<p>A call centre is a group or department in which employees receive and make high volumes of telephone calls.</p> <p>The Landcom (2018) estimate of <b>12 m<sup>2</sup></b> is retained because no other estimates are available.</p> <p>The <b>10 m<sup>2</sup> to 25 m<sup>2</sup></b> range is based on professional judgement with the upper bound of <b>25 m<sup>2</sup></b> reflecting the possibility that greater use of automation is likely with some business models.</p>
<b>Retail Premises</b>				
Shops and cafes	m <sup>2</sup> GFA	35	30 to 40	<p>No revision is made to the Landcom (2018) estimate because all estimates are close to <b>35 m<sup>2</sup></b>, particularly the City of Melbourne Census (2021) estimate of <b>36 m<sup>2</sup></b>.</p> <p>The lower bound of the range reflects the Cox Consulting and JLL (2023) estimate of <b>30 m<sup>2</sup></b>.</p> <p>The upper bound of the range reflects the Urbis (2021) estimate <b>39 m<sup>2</sup></b> for outer ring retailers.</p>

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
Department stores	m <sup>2</sup> GFA	55	45 to 65	<p>The Landcom (2018) estimate is retained because there are no other estimates available.</p> <p>The tight range around the <b>55 m<sup>2</sup></b> estimate is due to the similarities between all types of department stores.</p>
Large format retail	m <sup>2</sup> GFA	70	45 to 100	<p>Large format retail premises include retail buildings that generally requires a large area for handling, display or storage of goods (not foodstuffs or clothing) for sale,</p> <p>The workspace ratio for large format retail is revised down from <b>125 m<sup>2</sup></b> to <b>70 m<sup>2</sup></b> because use of space-saving technologies and just-in-time inventory management has reduced the workspace required per employee. Also, the introduction of a new land use called retail services removes automotive retailers from the grouping.</p> <p>The <b>70 m<sup>2</sup></b> estimate is the rounded average of the four available estimates below. The range reflects the variance of the four estimates.</p> <p>Urbis (2021) estimated a workspace ratio of <b>53 m<sup>2</sup></b>- for inner ring and <b>93 m<sup>2</sup></b> for outer ring bulky goods retailers. Mecone (2021) show a range <b>45 to 80 m<sup>2</sup></b> for retailers in ELDM areas.</p>
Retail services	m <sup>2</sup> GFA	80	50 to 120	<p>Retail services is a new category to represent urban services in ELDM lands that include activities such as motor vehicle services, printing, waste management and courier services.</p> <p>The <b>80 m<sup>2</sup></b> estimate is the rounded average of the five available estimates below. The range reflects the variance of the four estimates.</p> <p>Urbis (2021) estimate <b>53 to 93 m<sup>2</sup></b> for inner ring to outer ring retailers. Mecone (2021) show a range <b>45 m<sup>2</sup> to 80 m<sup>2</sup></b> for retailers in ELDM areas.</p> <p>The upper end of the range is set by Automotive retailers with workspace ratios averaging <b>120 m<sup>2</sup></b> according to Urbis (2021).</p>



Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
<b>Industrial Premises</b>				
Traditional manufacturing	m <sup>2</sup> GFA	100	50 to 200	<p>Manufacturing is split into its traditional and advanced segments. Traditional manufacturing is based on dedicated plant and production lines with little or no flexibility.</p> <p>No revision is made to the Landcom (2018) estimate of <b>100 m<sup>2</sup></b> because it is near the midpoint of the <b>43 m<sup>2</sup> to 208 m<sup>2</sup></b> range found from the various sources used.</p> <p>Cox Consulting and JLL (2023), City of Sydney Survey (2021) and City of Melbourne Census (2021) estimate <b>75 m<sup>2</sup></b>, <b>52 m<sup>2</sup></b> and <b>43 m<sup>2</sup></b> respectively.</p> <p>Urbis (2021) found that workspace ratios averaged <b>67 m<sup>2</sup></b>, <b>201 m<sup>2</sup></b> and <b>208 m<sup>2</sup></b> in the inner, middle, and outer rings of Sydney respectively.</p>
Advanced manufacturing	m <sup>2</sup> GFA	200	150 to 300	<p>Advanced manufacturing generally includes production activities that depend on information, automation, computation, software, sensing, and networking.</p> <p>The <b>200 m<sup>2</sup></b> estimate is founded on the Urbis (2021) manufacturing estimates of <b>201 m<sup>2</sup> to 208 m<sup>2</sup></b> for the middle to outer rings where advanced manufacturing is located.</p> <p>The <b>150 m<sup>2</sup> to 300 m<sup>2</sup></b> range is based on a similar sized range around the 2023 guidance given to traditional manufacturing.</p>
High-technology park	m <sup>2</sup> GFA	80	60 to 100	<p>A high-technology park defines an area where companies locate offices and laboratories to do work involving science and technology.</p> <p>The Landcom estimate of <b>65 m<sup>2</sup></b> is revised up to the Cox Consulting and JLL (2023) estimate of <b>80 m<sup>2</sup></b>.</p> <p>A +/- <b>20m<sup>2</sup></b> range around the <b>80 m<sup>2</sup></b> estimate is based on professional judgement that high technology businesses run similar business models with regards to jobs and space.</p>

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
Warehouse, transport, and storage	m <sup>2</sup> site area	150m <sup>2</sup> or 50 jobs/ha	50 to 300	<p>Warehouses are used for storing goods for an extended period, and are typically equipped with storage areas, loading docks, conveyors, and other material-handling equipment. Warehousing also involves the transport and storage of inventory in and out of the warehouse, as well as the tracking of goods and inventory.</p> <p>No revision is made to the Landcom (2018) estimate of <b>150 m<sup>2</sup></b> because it is the same as the Cox Consulting and JLL (2023) estimate. Cox Consulting and JLL (2023) also estimate <b>50 jobs/ha</b> for very early-stage proposals when the possible business mix is highly uncertain.</p> <p>The wide <b>50m<sup>2</sup> to 300m<sup>2</sup></b> range is based the range of estimates supplied by different sources. City of Melbourne (2021) show <b>49 m<sup>2</sup></b> and <b>303 m<sup>2</sup></b> for Wholesaling and Transport, Postal and Warehousing respectively while Urbis (2021) estimate a <b>189 m<sup>2</sup> to 276 m<sup>2</sup></b> range for logistics and warehouses for inner to outer rings for Metropolitan Sydney.</p>
Data centres	m <sup>2</sup> GFA	200	100 to 400	<p>A data centre is a facility with a principal purpose of collecting, distributing, processing, or storing electronic data using information technology.</p> <p>DPE (2021) desk-top research found that the labour intensity of data centres appears to be marginally more extensive than warehousing where automation is also common. Accordingly, the <b>200m<sup>2</sup></b> estimate is based on 5 FTE staff are required to run a typical sized data centre of 1000m<sup>2</sup>.</p> <p>The <b>100m<sup>2</sup> to 400m<sup>2</sup></b> range is based on professional judgement given a similar sized range around the 2023 guidance given to warehousing.</p>

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
<b>Health Premises</b>				
Hospital	m <sup>2</sup> GFA	20 m <sup>2</sup> or 0.157 beds	15 to 25	<p>Hospital means a building or place used for the purpose of providing professional health care services to people admitted as in-patients.</p> <p>The <b>20m<sup>2</sup></b> guidance is based on the Cox Consulting and JLL (2023) estimate, with the <b>15m<sup>2</sup> to 25m<sup>2</sup></b> range reflecting possible minor deviations in business models applied in different regions.</p> <p>The <b>0.157 beds</b> per FTE guidance is estimated using 2020-21 data for NSW from Australian Institute of Health and Welfare (2023). NSW hospital staff and average available bed numbers in 2020-21 were estimated at 132,757 and 20,787 respectively, giving 5.4 staff per bed or <b>0.157 beds</b> per staff member.</p>
Medical centres	m <sup>2</sup> GFA	32	25 to 45	<p>Medical centres include premises that are used for providing health services from preventative care to surgical treatment to counselling.</p> <p>The <b>32m<sup>2</sup></b> guidance is based on the mid-point of City of Sydney Survey (2017) range of <b>23 m<sup>2</sup></b> in the CBD to <b>42 m<sup>2</sup></b> in non-CBD centres for Health.</p> <p>The <b>25m<sup>2</sup> to 45m<sup>2</sup></b> range is simply the rounded values of the range found for Health by the City of Sydney Survey (2017).</p>

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
<b>Education Premises</b>				
Primary school	students	15	14 to 16	<p>The <b>15 students</b> guidance is based on Student (FTE) to teaching staff (FTE) estimates from ABS (2023) for all primary schools in NSW.</p> <p>The <b>14 to 16 students</b> range is built on the ABS (2023) estimates that the student-to-teaching staff ratio is <b>14.1</b> for Independent High Schools, <b>15.8</b> for Catholic High Schools and <b>15.0</b> for Government high schools.</p>
High school	students	12	10 to 13	<p>The <b>12 students</b> guidance is based on Student (FTE) to teaching staff (FTE) estimates from ABS (2023) for all high schools in NSW.</p> <p>The <b>10 to 13 students</b> range is built on the ABS (2023) estimates that the student-to-teaching staff ratio is <b>10</b> for Independent High Schools, <b>12</b> for Catholic High Schools and <b>13</b> for Government high schools.</p>
University and TAFE	m <sup>2</sup> GFA	100	40 to 100	<p>The Landcom (2018) estimate of <b>100 m<sup>2</sup></b> is retained. Landcom’s estimate is also the same as the Cox Consulting and JLL (2023) guidance.</p> <p>The lower bound of the <b>40 m<sup>2</sup> to 100 m<sup>2</sup></b> range is built on City of Sydney Survey (2017) that shows a range <b>39 m<sup>2</sup> to 50 m<sup>2</sup></b> for Higher Education and Research and the City of Melbourne Census (2021) estimate <b>61 m<sup>2</sup></b> for Education and Training.</p> <p>The upper bound of the <b>40 to 100 m<sup>2</sup></b> range reflects the Landcom (2018) and Cox Consulting and JLL (2023) estimates</p>

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
<b>Community and Cultural Premises</b>				
Childcare centre	m <sup>2</sup> GFA	35 m <sup>2</sup> or 0.154 children	30 to 40	<p>A childcare centre, also known as a day care centre or preschool, is a facility that provides care, supervision, and early education for young children, typically from infants to preschool-age (0-5 years old).</p> <p>The Landcom (2018) estimate of <b>35 m<sup>2</sup></b> is retained because there are no other estimates available. The <b>30 m<sup>2</sup> to 40 m<sup>2</sup></b> range is based on professional judgement. The range allows analysts to define a variance from the 2023 guidance for land uses that are more jobs dense or less jobs dense than the average.</p> <p>The 2023 guidance of <b>0.154 child</b> per FTE job position is based on the average of the minimum legal requirements defined in the National Quality Framework by ACECQA (2023) [(1/4 + 1/5 + 1/10 + 1/11)/4]. These minimum requirements are 1 educator to 4 children aged 0-2 years, 1 educator to 5 children aged 2-3 years, 1 educator to 10 children aged 3 years and 1 educator to 15 children aged 4 years and older.</p>
Community centre	m <sup>2</sup> GFA	35	30 to 40	<p>A community centre can be defined as a physical space or facility that serves as a hub for a specific community or neighbourhood. It provides a gathering place for residents to engage in social, educational, recreational, and cultural activities.</p> <p>The Landcom (2018) estimate of <b>35 m<sup>2</sup></b> is retained because there are no other estimates available.</p> <p>The <b>30 m<sup>2</sup> to 40 m<sup>2</sup></b> range is based on professional judgement. The range allows analysts to define a variance from the 2023 guidance for land uses that are more jobs dense or less jobs dense than the average.</p>

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
Fitness centre	m <sup>2</sup> GFA	100	80 to 120	<p>A fitness centre is a dedicated establishment designed to promote and enhance physical fitness and overall health. It typically offers a wide range of exercise equipment, facilities, and services aimed at accommodating individuals with diverse fitness goals and preferences.</p> <p>The Landcom (2018) estimate of <b>100 m<sup>2</sup></b> is retained because there are no other estimates available.</p> <p>The <b>80 m<sup>2</sup> to 120 m<sup>2</sup></b> range is based on professional judgement. The range allows analysts to define a variance from the 2023 guidance for land uses that are more jobs dense or less jobs dense than the average.</p>
Tourism and culture	m <sup>2</sup> GFA	125	90 to 300	<p>Tourism and culture premises can include historical and heritage sites, museums and galleries, festivals and celebrations cultural performances and other tourist and cultural attractions.</p> <p>The <b>125 m<sup>2</sup></b> guidance is based on the Cox Consulting and JLL (2023) estimate.</p> <p>The <b>90 m<sup>2</sup> to 300 m<sup>2</sup></b> range is based on the City of Sydney Survey (2017) estimates of <b>91 m<sup>2</sup> to 133 m<sup>2</sup></b> for tourist, cultural and leisure land uses in CBD and non-CBD locations and the City of Melbourne Census (2022) estimate for Arts and Recreation at <b>278 m<sup>2</sup></b>.</p>
Sports and recreation	m <sup>2</sup> GFA	225	130 to 250	<p>Sports and recreation facilities are physical locations designed and equipped to provide opportunities for sports, physical activities, and leisure pursuits. These facilities are typically built to accommodate various sports and recreational activities and cater to the needs of individuals, teams, and communities.</p> <p>The <b>225 m<sup>2</sup></b> guidance is based on the Cox Consulting and JLL (2023) estimate.</p> <p>The lower bound of the <b>130 m<sup>2</sup> to 250 m<sup>2</sup></b> range is based on the City of Sydney Survey (2017) that shows <b>133 m<sup>2</sup></b> for Tourist, Cultural and Leisure. The upper bound provides an upwards buffer above the 2023 guidance and is based on professional judgement.</p>

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
Prisons	prisoners	2.2	2.2 to 2.4	<p>Prisons are facilities where individuals who have been convicted of crimes are incarcerated and serve their sentences as determined by a court of law.</p> <p>The <b>2.2 prisoners</b> per FTE job position guidance is based on employment data for prison officers (4-digit ANZSCO for NSW of 5,939 employed persons from the 2021 Census (ABS 2022) and prisoner numbers for NSW in 2020-21 of 12,891 prisoners sourced from PC (2022).</p> <p>The <b>2.2 prisoners to 2.4 prisoners</b> per FTE range is given because the quantum used to calculate the 2023 guidance is based on employed persons. Employed persons includes both full time and part time categories. The upper bound of <b>2.4 prisoners</b> assumes that 100 employed persons is equivalent to 90 FTEs. The 90% estimate is the NSW average for all industries using ABS Labour Force Survey data.</p>

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
<b>Accommodation Premises</b>				
Hotel premises	m <sup>2</sup> GFA	100 m <sup>2</sup> or 4 rooms	100 to 525 or 4 to 15 rooms	<p>Hotel premises refer to the physical location and areas within a hotel property where various facilities and services are provided to guests. These premises typically include a range of services, including guest rooms, lobby, restaurants, bars and meeting and event spaces.</p> <p>Landcom (2018) estimate of <b>100 m<sup>2</sup></b> is retained because there is significant uncertainty on estimates that could possibly be used. The 2023 guidance of <b>4 rooms</b> per FTE job position is based on 25 m<sup>2</sup> per room being applied to the 100m<sup>2</sup> guidance.</p> <p>The uncertainty relates to the source of guidelines quoted, use of the count of employed persons instead of FTEs in an industry where part-time employment is very common and measures for hotels being grouped with other hospitality land uses. An example of the multi-land use grouping problem is the City of Melbourne Census (2022) estimate for Accommodation and Food Services of <b>60 m<sup>2</sup></b>. The inclusion of Food Services may reduce the workspace ratio considerably.</p> <p>The upper bound of the <b>100 m<sup>2</sup> to 525 m<sup>2</sup></b> range is based on <b>15 guest rooms</b> of 35 m<sup>2</sup> per room in size.</p>



Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
Serviced apartments	m <sup>2</sup> GFA	500 m <sup>2</sup> or 10 apartments	200 to 1400 or 4 to 20 apartments	<p>Serviced apartments are fully furnished accommodations that offer the amenities and services typically found in hotels while providing the privacy and convenience of a residential apartment. They are designed to cater to the needs of both short-term and long-term stays.</p> <p>Again, significant uncertainty over the estimates exists. The uncertainty relates to the source of guidelines quoted, use of the count of employed persons instead of FTEs and measures for serviced apartments being grouped with other hospitality land uses.</p> <p>The 2023 guidance of <b>500 m<sup>2</sup></b> is based on industry benchmarks of <b>10 apartments</b> per staff at 50m<sup>2</sup> per apartment.</p> <p>The lower bound of the <b>200 m<sup>2</sup> to 1400 m<sup>2</sup></b> range is Landcom (2018) estimate of <b>200 m<sup>2</sup></b> that is consistent with <b>4 apartments</b> per staff at 50 m<sup>2</sup> per apartment (studio sized).</p> <p>The upper bound of the <b>100 m<sup>2</sup> to 1400 m<sup>2</sup></b> range is based on <b>20 apartments</b> of 70 m<sup>2</sup> per apartment (2 bedroom sized).</p>
Student accommodation	m <sup>2</sup> GFA	500 m <sup>2</sup> or 20 rooms	400 to 1400 m <sup>2</sup> or 16 to 56 rooms	<p>Student accommodation refers to housing specifically designed and intended for students attending universities, colleges, or other educational institutions. Student accommodation can come in various forms, including dormitories, student halls, apartments, or shared houses.</p> <p>The number of staff per student in student accommodation can vary depending on several factors, including the size of the accommodation facility, the services provided, and the specific policies of the institution managing it. Student accommodation business models are similar but generally more labour intensive with smaller accommodation types compared with those for serviced apartments.</p> <p>The 2023 guidance of <b>500 m<sup>2</sup></b> is the same as the Landcom (2018) estimate. The 500 m<sup>2</sup> estimate is equivalent to <b>20 rooms</b> at 25 m<sup>2</sup> per room.</p> <p>The range of <b>400 m<sup>2</sup> to 1400 m<sup>2</sup></b> is equivalent to <b>16 rooms to 56 rooms</b> at 25 m<sup>2</sup> per room.</p>

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
Aged care	residents	2.25 residents	n.a.	<p>Aged care accommodation refers to residential facilities or housing options specifically designed to cater to the needs of elderly individuals who require assistance with daily activities and healthcare services. Aged care accommodation generally refers to nursing homes.</p> <p>The 2023 guidance of <b>2.25 residents</b> per FTE job position is based on mandatory daily minutes to resident ratio outlined by the Department of Health and Aged Care (2023) in response to the Royal Commission into Aged Care in 2019.</p> <p>DHAC (2023) have mandated that residential aged care minutes will increase to 200 minutes daily from 1 October 2023, The 200 minutes daily includes 40 minutes from a registered nurse to improve the quality of care that older people receive.</p> <p>The 200 mins may be compared with the daily FTE equivalent of 450 minutes (assuming a 7½hr day). This calculation for <math>450/200 = 2.25</math> residents. No range is given due to the mandatory regulations in the aged care industry.</p>
Retirement living	m2 GFA	380 m <sup>2</sup> or 8 apartments	220 to 460 m <sup>2</sup> or 4 to 9 apartments	<p>Retirement living accommodation and retirement living are not the same despite both accommodating older adults. Level of care is much less with a commensurate reduction in services and support. Retirement living staff may be available for general maintenance or to provide basic services. They are not typically trained healthcare professionals.</p> <p>The lower bound for labour intensity for retirement living will be marginally above serviced apartments while the upper bound will be less than for aged care.</p> <p>The 2023 guidance of <b>380 m<sup>2</sup> or 8 apartments</b> assumes that 70% of the residential living apartments in a complex are like serviced apartments and 30% are similar to aged care type apartments.</p> <p>The lower bound of the range of <b>220 m<sup>2</sup> to 460m<sup>2</sup> or 4 to 9 apartments</b> is based on a 30:70 mix of serviced apartments: aged care type servicing.</p> <p>The upper bound of the range of <b>220 m<sup>2</sup> to 460m<sup>2</sup> or 4 to 9 apartments</b> is based on a 90:10 mix of serviced apartments: aged care type servicing.</p>

Land Use	Per FTE job position	CPAG Workspace ratio		Sources and notes
		2023 Guidance	2023 Range	
<b>Defence and Aerospace</b>	m <sup>2</sup> GFA	75	60 to 90	<p>Defence and aerospace refer to two interconnected industries that are involved in the design, development, manufacturing, and maintenance of military and civilian aircraft, spacecraft, and associated technologies.</p> <p>Cox Consulting and JLL (2023) suggest <b>75 m<sup>2</sup></b>. No other estimates could be sourced.</p> <p>A range of <b>60 m<sup>2</sup> to 90 m<sup>2</sup></b> is suggested given the uncertainty over the point estimate made by JLL and Cox Consulting.</p>
<b>Aviation Facilities</b>	ha	80 jobs/ha	70 to 90	<p>Aviation facilities can be defined as physical structures or areas specifically designed and constructed to support various activities related to aviation. These facilities are essential for the operation, maintenance, and management of aircraft, airports, and other aviation-related services.</p> <p>Cox Consulting and JLL (2023) suggest <b>80 jobs per ha</b>. No other estimates could be sourced.</p> <p>A range of <b>70 jobs per ha to 90 jobs per ha</b> is suggested given the uncertainty over the point estimate made by JLL and Cox Consulting</p>
<b>Intermodal Facilities</b>	ha	30 jobs/ha	20 to 40	<p>Intermodal facilities are locations where different modes of transportation converge and connect to facilitate the transfer of freight or passengers between multiple modes of transportation.</p> <p>Cox Consulting and JLL (2023) suggest <b>30 jobs per ha</b>. No other estimates could be sourced.</p> <p>A range of <b>20 jobs per ha to 40 jobs per ha</b> is suggested given the uncertainty over the point estimate made by JLL and Cox Consulting</p>