

Centre for Future Work

Capital Works

**The economic and fiscal benefits of investment
in public school infrastructure**

Lisa Heap and Jim Stanford, October 2026



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Introduction

Investment in school infrastructure (including buildings, other facilities, and equipment) is an important determinant of educational quality and scholarly success. Capital investment in schools includes the construction of new schools, refurbishment of existing facilities, modern equipment and technology, upgrades to environmental systems, expansion of learning spaces, and provision of supporting infrastructure. In the twenty-first century this capital investment must not only include improving basic school infrastructure but must also support the capacity for schools to embrace the digital transformation.¹

There are significant economic and fiscal benefits from increasing expenditure on infrastructure for public schools. Bodies such as the World Bank recognise the importance of education infrastructure for maximising the accessibility and effectiveness of the education being delivered.² The evidence set out in this report shows that the standard of education infrastructure can detract from, or enhance, access to education.

In Australia there has been a shift in the trajectory of Australian Government funding for infrastructure for schools. When this funding first commenced in 1964, most federal capital funds for schools were allocated to public schools. Today, public schools are almost totally reliant on state and territory governments for capital funding whilst private schools can access both state and federal funding for capital improvements as well as receiving substantial funds from private sources including fees.³

There has been temporary additional funding to public schools for capital projects associated with Building the Education Revolution (BER), a fiscal stimulus program following the Global Financial Crisis (GFC), and one-off disbursements such as the Albanese Government's School Upgrade Fund in 2023-2024, however, there is considerable evidence that funding for public school infrastructure has been, and continues to be, inadequate to maintain school facilities in adequate condition.⁴ This is a concern given the documented impact of the quality of school infrastructure on educational attainment.

In this report we quantify the economic and fiscal benefits of increased funding for capital infrastructure for public schools in Australia. We build on findings originally published in a 2023 Centre for Future Work report.⁵ That report described the positive impact of increased funding to public schools for both educational attainment and the economy. It documented previous international and Australian research on this subject and reported new research regarding the economic and fiscal

¹ P. Barrett, A. Treves, T. Shmis, D. Ambasz, and M. Ustinova, *The Impact of School Infrastructure on Learning: A Synthesis of the Evidence. International Development in Focus*. (Washington DC: World Bank, 2019), xi.

² Barrett et al, *The Impact of School Infrastructure on Learning*.

³ See E. Rowe, 'A critique of the needs-based funding model in public schools: principals and their experiences of funding', *The Australian Educational Researcher* (2025) 52:2977–2997, <https://doi.org/10.1007/s13384-024-00800-6>; A. Rorris, *Investing in schools—Funding the future*, (South Melbourne: AEU, 2021); A Rorris, *How school funding fails public schools: How to change for the better*, (South Melbourne: AEU, 2025).

⁴ AEU, *The Building Divide in Australian Schools: How Capital Funding Fuels Educational Inequity*, (South Melbourne: AEU, 2026), https://www.aeufederal.org.au/application/files/7417/7154/5239/v3_The_Building_Divide_in_Australian_Schools_final.pdf

⁵ E. Littleton, F. Macdonald and J. Stanford, *The Case for Investing in Public Schools: The Economic and Social Benefits of public Schooling in Australia*, (Melbourne: Centre for Future Work, 2023), <https://futurework.org.au/report/the-case-for-investing-in-public-schools/>

benefits of increased operational funding (not capital infrastructure funding) in order to bring funding for public schools up to the Schooling Resource Standard (Gonski) benchmark.

The 2023 report considered three broad channels of benefits arising from this increased funding

1. The immediate employment and economic activity associated with the operation of the public school system
2. The enhanced labour market and productivity performance of students who complete their schooling
3. The broader social and fiscal benefits arising from positive spillovers of school completion for income security, welfare, health, and engagement with the justice system.

Further details of the methodology and findings from that approach are set out below.

In this new report we build on those findings to consider the impact of increased capital funding for public schools. To estimate the economic and fiscal benefits of infrastructure funding specifically, we applied previous research regarding the impact of capital infrastructure investment on educational attainment. We applied findings of an influential study published by Jackson and Mackevicius to estimate the educational outcomes associated with increased funding for capital infrastructure in public schools.⁶

Jackson and Mackevicius conducted a meta-analysis of 31 causal studies of the benefits of increased funding (both operational and capital) for schools on student success. They found (on average) a US\$1,000 increase in per pupil school spending (sustained over four years) increased test scores by 0.0316 standard deviations, high school graduation rates by 2.0 percentage points, and college going by 2.8 percentage points.⁷ They concluded that the effects of spending on schools in terms of capital and non-capital specific spending were similar.

Applying this finding and replicating the methodology of our 2023 report to estimate the benefits of increased school completion for labour market and social performance, we are able to estimate the positive impact of increases in capital funding on a range of economic, labour market, and social variables. The key findings in our report are set out in the next section. The following section provides a review of literature on the benefits of investment in infrastructure in schools. The following section describes our quantitative estimates of the employment, economic, and fiscal benefits that can be expected to unfold as a result of increased capital spending in Australian public schools. Finally, a conclusion reviews the importance to students and the Australian economy of greater investment in capital infrastructure for Australian public schools.

⁶ Jackson and Mackevicius 'What impacts can we expect from school spending policies? Evidence from evaluations in the United States', *American Economic Journal: Applied Economics*, (2024), 16(1): 412–446 <https://doi.org/10.1257/app.20220279>

⁷ Jackson and Mackevicius, 'What impacts can we expect', 441.

Key findings

The key findings of this report include:

- There is strong evidence in international research that enhanced capital expenditure on school buildings, facilities, and equipment improves student outcomes, which in turn generates meaningful economic and societal benefits.
- There are observable academic gains when physical learning environments are improved. This is particularly the case when investments target functional infrastructure such as environmental quality, classroom design, and facility conditions.
- There is some evidence that increased capital infrastructure expenditure in lower socio-economic areas has greater positive impact than in higher socio-economic areas.
- Across direct, indirect, and induced channels, a \$1 billion increment in school construction supports over 2500 new jobs, \$1.1 billion in new GDP (for a positive GDP multiplier of 1.1-to-1), and \$277 million per year in additional labour income.
- A permanent \$1 billion increase in annual public school capital funding can be expected to raise the school completion rate by 1.36 percentage points. This increment in school completion then generates broader economic and social benefits, such as an improvement in aggregate wage payments of just over \$1 billion per year after a 20-year phase-in period (and by smaller amounts in the intervening years), and a total boost to GDP resulting from the higher productivity of workers with completed high school education of \$2.2 billion (also after a 20-year phase-in period). We anticipate that additional social and fiscal savings arising from improved school completion attributable to better school capital infrastructure would range between 0.01% and 0.14% of GDP. This is equivalent to between \$0.25 billion and \$4 billion in GDP (benchmarked against Australia's 2025 GDP).
- In total across the three categories of simulated benefits, we expect that a sustained \$1 billion increase in public school capital funding would ultimately generate between \$3.5 billion and \$7.3 billion per year in GDP benefits, experienced across all stakeholders: including the construction industry and its supply chain, downstream consumer industries, improved labour market performance, and fiscal benefits for government.

The benefits of improved school infrastructure

This section of the report reviews evidence from previous published research regarding the link between investment in school infrastructure and the educational, economic and societal benefits that flow from it. Investment in school buildings, facilities, and equipment has been recognised as an important policy mechanism for improving educational outcomes and hence broader societal wellbeing. Education infrastructure can detract from or enhance access to education.

The United Nations Sustainable Development Goals state that quality education is the ‘foundation to improving people’s lives and sustainable development’.⁸ The World Bank has recognised that to sustain the positive benefits of education, infrastructure must be designed ‘to maximize the accessibility and effectiveness of the education being delivered’.⁹ Further, given the rate and importance of the digital transformations currently underway, investment should include improving basic school infrastructure but also must allow for embracing these digital transformations.¹⁰

Investment in capital infrastructure expenditure includes construction of new schools, refurbishment of existing facilities, upgrades to environmental systems, expansion of learning spaces, provision of modern learning and teaching technology, and provision of supporting infrastructure.

Research shows there is an established link between the capital investment in school infrastructure and student achievement (measured by test scores, school completion, and enrolment in higher education).¹¹ Several studies have identified a positive link between the capital investment in school infrastructure and beneficial outcomes for students and the broader community.

Educational benefits of school capital investment

There are consistent findings across education and economic literature that improved school infrastructure contributes positively to student academic outcomes. In a review of 129 publications covering school environments, education policy and learning processes, Barrett et al concluded that quality learning environments are strongly associated with improved academic outcomes even after controlling for socioeconomic background and other contextual variables. They found strong evidence that factors including: the soundness of the built environment; access to basic services such as water, sanitation, waste disposal, electricity and communications; the quality of the indoor environment (especially air quality); and the quality of outdoor play spaces increased the chances of students and teachers attending school, remaining healthy at school and teachers remaining in the profession.¹² Citing an earlier study conducted in the United Kingdom, the authors found that physical learning environments may explain approximately 16% of variation in student learning outcomes.¹³

⁸ UN United Nations Sustainable Development Goals, (undated), <https://www.un.org/sustainabledevelopment/development-goals/>

⁹ Barrett et al, *The Impact of School Infrastructure on Learning*, (2019), xi.

¹⁰ Barrett et al. (2019).

¹¹ See Rorris, *Investing in schools—Funding the future*, for a summary of research prior to 2021.

¹² Barrett et al, (2019), 17.

¹³ P. Barrett, Y. Zhang, F. Davies and L. Barrett *Clever classrooms: Summary report of the HEAD Project*. (Manchester: University of Salford, 2015).

The factors identified by Barrett et al have also been associated with positive educational outcomes in studies in the United States with findings that spatial configurations, noise, heat, cold, light, and air quality impacting on students' and teachers' ability to perform.¹⁴

The quality of school facilities is a predictor of the intention of teachers to leave their current school, even after controlling for salary, school leadership, and student demographics.¹⁵ In a recent 2026 study the quality of school infrastructure was also linked to chronic student absenteeism, with the authors finding that specific building features, including maintenance status, indoor pesticide use, moisture/mould-prone materials, air quality and water piping types, are associated with absenteeism.¹⁶

Especially important in the Australian context, overseas studies have also measured the impact of heat on learning. A 2020 study found that school air conditioning mitigates the negative effects of heat on student outcomes.¹⁷ Where there was no air-conditioning, reduced student learnings of about 1% were associated with each 1°F increase in average school-year temperature. The decline in student outcomes was greater for low-income, Black, and Hispanic students, roughly three times larger than for wealthier or white peers. Air conditioning was found to offset about 78% of the damage caused by increasing temperatures.

Since 2010 there have been several relevant economic studies in the United States. These studies focus on the relationship between decisions to increase infrastructure expenditure (via local votes for investment in infrastructure) and the educational and broader societal impacts of these investments. A series of research pioneered by Cellini et al in 2010 found evidence of causal links between infrastructure investment and student outcomes and broader societal benefits.¹⁸

Cellini et al examined the relationship between votes on bonds to increase capital infrastructure spending in local districts in California, and the educational and broader societal impacts of these investments. Whilst the primary findings in the Cellini study focussed on the impact of investments in

¹⁴ M. Schneider, *Do School Facilities Affect Economic Outcomes?* (Washington DC: National Clearinghouse for Educational Facilities, 2002).

¹⁵ J. Buckley, M. Schneider and Y. Shang, 'Fix it and they might stay: School facility quality and teacher retention in Washington, D.C.', *Teachers College Record*, (2005), 107(5), 1107–1123.

¹⁶ Z. Wu, A. Park, M. Awada, R.H. Assaad, 'School building conditions and chronic absenteeism within socioeconomic contexts: a component-level statistical analysis in New York State', *Engineering, Construction and Architectural Management*, (2026), Vol. 33 No. 15 pp. 432–457, DOI: <https://doi.org/10.1108/ECAM-02-2026-0241>

¹⁷ R.J. Park, J. Goodman, M. Hurwitz and J. Smith, 'Heat and Learning', *American Economic Journal: Economic Policy*, (2020), 12 (2): 306–39.

¹⁸ S. R. Cellini, F. Ferreira, and J. Rothstein, 'The value of school facility investments: Evidence from a dynamic regression discontinuity design', *The Quarterly Journal of Economics*, (2010), Vol. 125, Issue 1, February 2010, 215–261, <https://doi.org/10.1162/qjec.2010.125.1.215>; C.A. Neilson, and S. Zimmerman, 'The effect of school construction on test scores, school enrollment, and home prices', *Journal of Public Economics*, (2014) Vol. 120, December 2014, 18–31, DOI: 10.1016/j.jpubeco.2014.08.002; K. Hong and R. Zimmer, 'Does Investing in School Capital Infrastructure Improve Student Achievement?', *Economics of Education Review*, (2016) Vol. 53 <http://dx.doi.org/10.2139/ssrn.2672102>; J. Lafortune and D. Schönholzer, 'The Impact of School Facility Investments on Students and Homeowners: Evidence from Los Angeles', *American Economic Journal: Applied Economics*, (2022), 14(3), 254–289, <https://www.jstor.org/stable/27154417>; B. Biasi, J. Lafortune, and D. Schönholzer, 'What Works and for Whom? Effectiveness and Efficiency of School Capital Investments Across the U.S.', *The Quarterly Journal of Economics*, (2024), 140(3), 2329–2379.

school infrastructure on house prices, the methodological approach adopted in this study stimulated several further studies which looked at educational attainment.

Using a similar approach to that adopted by Cellini et al, Neilson and Zimmerman examined the effects of a 15-year school construction program on home prices, academic achievement and school enrolment in a disadvantaged urban district.¹⁹ The results showed reading achievement gains of 0.15 standard deviations six years after occupancy of new facilities and increases in public school enrolments.

Hong and Zimmer (2016) examined the impact of capital expenditures on school district proficiency rates in Michigan, finding that there is some evidence that capital expenditure has positive effects on student proficiency.²⁰ The results in this study indicated that the long-term benefits of capital investments include increases in reading proficiency of between 2 and 6% (0.1-0.3 standard deviations).²¹

Lafortune and Schönholzer analysed the Los Angeles Unified School District (LAUSD) construction program. They found that four years of attendance in newly constructed schools increased mathematics achievement by 0.10 standard deviations and English language achievement by 0.05 standard deviations. Attendance also improved by approximately four days per academic year.²²

A study conducted by Biasi et al in 2024 again investigated the effects of bond authorisations. They found that bond authorisations raise both test scores and housing prices. They estimate that on average a US\$1000 increase in capital spending per student results in a 0.05 standard deviation increase in test scores.²³ However, they also found that when the type of investment and the type of student were considered more precise benefits from capital infrastructure investment can be assessed. Investments in heating ventilation and air-conditioning (HVAC) systems, removal of toxic materials, safety improvements, STEM facilities, classroom expansion, and infrastructure upgrades generated larger measurable improvements in test scores. In contrast, expenditure on athletic facilities produced no measurable academic gains.

They also found that targeting capital investment to lower socio-economic areas had greater impact. They concluded that

‘...closing the spending gap between high-SES and low-SES districts and targeting the additional funds towards HVAC and safety/health (the categories with the highest impacts) could reduce the initial gap in test scores among these districts by up to 25%.’²⁴

In an important meta-analysis of 31 causal studies, Jackson and Mackevicius confirmed the effect of school spending on student outcomes.²⁵ Using this meta-analysis Jackson and Mackevicius estimated that the effects of spending on schools in terms of capital and non-capital specific spending were similar. They found on average, a US\$1,000 increase in per pupil school spending

¹⁹ Neilson & Zimmerman, ‘The effect of school construction on test scores, school enrollment and home prices’.

²⁰ Hong & Zimmer, ‘Does Investing in School Capital Infrastructure Improve Student Achievement?’

²¹ Hong & Zimmer, 155.

²² Lafortune & Schönholzer, ‘The Impact of School Facility Investments on Students and Homeowners’, 255, 270.

²³ Biasi et al, ‘What Works and for Whom?’, 4.

²⁴ Biasi et al, 4.

²⁵ Jackson and Mackevicius, ‘What impacts can we expect’.

(sustained over four years) increased test scores by 0.0316 standard deviations, high school graduation rates by 2.0 percentage points, and college going by 2.8 percentage points.

Whilst the range of improvements in educational attainment differ in the above studies, they all support the proposition that there is a positive causal link between capital investment in school infrastructure and educational attainment.

Broader social and economic benefits of school capital investment

Beyond academic performance, there are broader social and economic returns from school infrastructure investment. As discussed above, Barrett et al. emphasised that well-maintained facilities improve attendance, health outcomes, teacher retention, and school participation.²⁶ Factors such as safe construction, reliable utilities, good air quality, and access to outdoor spaces were associated with healthier school environments and increased educational engagement. They also point to the potential community-level benefits where schools facilities such as sports grounds, halls, and recreational facilities are shared with community.

Several of the above studies examined economic outcomes through housing markets. Cellini et al. found that school bond passage increased local house prices by approximately 6%, suggesting households place a greater value on school infrastructure improvements than the cost of tax increases required to fund them. Housing market responses captured both academic and non-academic benefits including safety, aesthetics, and community amenities.²⁷

Lafortune and Schönholzer similarly found that neighbourhood house prices increased by 6% following new school construction. Their economic valuation estimated total benefits of approximately US\$15 billion relative to program costs of US\$9 billion, producing a public value return of \$1.62 per dollar invested. About 24% of total value was attributable directly to test score increases, indicating substantial benefits from broader quality-of-life improvements.²⁸

Neilson and Zimmerman reported even larger property effects, with home values increasing by approximately 10.3% following school construction and public school enrolment increasing by 17.3%.²⁹

Biasi et al. suggest targeted infrastructure spending could reduce achievement gaps by up to 25% in low SES schools thus pointing to substantial equity gains that can be made if directing infrastructure spending towards lower SES schools.³⁰

In sum, there is strong evidence that capital expenditure on improved school infrastructure delivers meaningful educational and societal benefits. There are observable academic gains when learning environments are improved. This is particularly the case when investments target functional infrastructure such as environmental quality, classroom design, and facility conditions. There is some evidence that increased capital infrastructure expenditure in lower socio-economic areas has greater positive impact than that in higher socio-economic areas. Beyond student outcomes, school capital investment enhances attendance, improves health, increases housing values, improves community amenity, and economic equity.

²⁶ Barrett et al, *The Impact of School Infrastructure on Learning*.

²⁷ Cellini et al, 'The value of school facility investments', 21.

²⁸ Lafortune and Schönholzer, 'The Impact of School Facility Investments on Students and Homeowners', 285.

²⁹ Neilson and Zimmerman, 'The effect of school construction on test scores, school enrollment and home prices', 24, 26.

³⁰ Biasi et al, 'What Works and for Whom?', 34.

Quantifying the economic and fiscal benefits of new capital infrastructure funding

The preceding section reviewed a considerable body of published literature confirming that investments in higher quality, more modern school buildings, equipment, and infrastructure have positive impacts on the learning environment, student success, and school completion rates. In this section of the report, we will now apply those findings (along with other economic data) to generate quantitative estimates of the employment, economic, and fiscal benefits that can be expected to unfold as a result of increased capital spending in Australian public schools. Our argument is consistent with robust findings of existing published literature showing the benefits of improved educational attainment for productivity, economic growth, and incomes.³¹

The discussion in this section parallels the structure of the analysis provided in a previous 2023 report from the Centre for Future Work on the economic and fiscal benefits of public school education services.³² That report identified three broad channels of economic benefit arising from current spending:

1. The immediate economic footprint of public schools (including direct and spillover employment opportunities).
2. The improvements in employability, earnings potential, and productivity arising from a workforce strengthened with a greater proportion of school graduates.
3. Economic and fiscal benefits arising from better outcomes in health, social welfare, and criminal justice thanks to a better educated population.

Benefits in the first of those categories were estimated using familiar input-output economic analysis, tracking the impacts of public school spending in the school system itself, upstream through the complex supply chain which services schools, and downstream through the additional consumer spending induced thanks to increased employment in schools and their supply chain.

Benefits in the second and third categories were estimated on the basis of assumptions regarding the impact of full SRS operational funding for public schools on school completion rates. Expected improvements in school completion translate into improved earnings and productivity outcomes, estimated on the basis of data regarding the correlation between school completion, employability, earnings, and productivity.

The third category of benefits—savings from health and social outcomes—is the most difficult to quantify, and hence a range of potential results was presented reflecting the range of impact parameters identified in published literature. The previous report stressed, however, that while those broader health and social benefits take time to be experienced, and are more difficult to measure due to their diffuse nature, they should not be discounted. Previously published research is clear that a better educated population is a healthier population, less reliant on income supports and other social

³¹ A fulsome survey of that literature is provided in the Littleton et al. (The 2023 Report) at 13-19. See especially E. A. Hanushek and L. Woessmann, *Universal Basic Skills: What countries stand to gain*, (Paris: OECD, 2015) Deloitte Access Economics, *The economic impact of improving schooling quality*, (Canberra: Department of Education and Training, 2017), <https://nla.gov.au/nla.obj-3062316562/view>

³² See Littleton et al. (The 2023 Report).

benefits, and less likely to experience engagement with the criminal justice system. Those impacts need to be considered in any cost-benefit analysis of policies regarding education funding.

Key findings of the 2023 report include that additional funding of \$6.6 billion per year to public schools (the amount required to meet the SRS standard) would reverse the decline in school completion rates. This increased funding, and the improved school completion rates associated with it, would support increased direct employment and economic activity, improved earnings and productivity for school graduates, and reduced fiscal and social costs from early school-leaving. Altogether, the improvements in funding and school completion would drive economic and fiscal benefits totalling \$17.8 to \$24.7 billion per year (in 2022-dollar terms) after 20 years.

The economic benefits outlined in that report grow over time, as successive cohorts of better-educated school graduates feed through into the overall population. Fiscal benefits (estimated at \$9 - \$14 billion per year after 20 years in 2022-dollar terms) would flow to governments because of increased economic activity, higher tax revenues, and reduced fiscal costs associated with better resourced schools and improved school attainment.

This current report now extends those previous estimates of the benefits of current public school operational spending, to consider the additional economic and fiscal benefits which would be generated by increased capital spending for public school infrastructure. The same three channels of benefits are simulated. Each of these three categories of benefits arising from increased school capital funding are considered in turn below, followed by an analysis of their combined and cumulative impacts.

1. Economic footprint of school construction

Construction is an important leading indicator of Australia's overall economic trajectory. Economists carefully watch trends in construction for signs of the future direction of broader growth and job creation. This is because the construction sector is especially sensitive to cyclical trends (such as interest rates and consumer confidence), and also because construction activity generates substantial knock-on stimuli for other sectors of the economy.

Previous research has quantified these broader economic benefits from construction. For example, a notable report prepared by EY consultants for the Urban Development Institute of Australia³³ found that each \$1 billion invested in construction supports almost \$3 billion in total gross output, and \$1.15 billion in value-added (after deducting the cost of intermediate inputs). Each new job in construction is associated with 3.5 jobs in total across construction, its supply chain, and downstream consumer industries.

The positive impact of the federal government's school construction stimulus program enacted quickly during the 2008-09 global financial crisis provides evidence of the strong spillover benefits of publicly financed construction on overall economic activity. International comparisons confirm that Australia's school construction grants, implemented in 2009 at the trough of that global downturn,

³³ Urban Development Institute of Australia, *The Economic Contribution of the Development Industry*, (2019), https://udia.com.au/wp-content/uploads/2020/09/9075_UDIA_EY-Report-Cards_Version2_FinalR.pdf.

were a key factor in preventing recession here.³⁴ Australia was the only OECD country to avoid recession at that time, and the school construction program was a key factor.

Our Approach

We estimate the direct economic footprint associated with school capital investments in the following manner. First, we define a ‘benchmark’ volume of capital spending with which to measure economic impacts: a \$1 billion step increase in annual public school capital spending, sustained over the foreseeable future. The investment is measured in 2025-dollar terms, in order to be commensurate with the macroeconomic data analysed below. The evidence shows that the actual increment of new capital spending needed to meet the infrastructure needs of Australia’s public schools will be greater than this. However, this \$1 billion annual benchmark serves as a convenient ‘measuring stick’ which can then be used to simulate the economic impacts of whatever capital spending program is eventually implemented.

Direct benefits (school construction)

On the basis of ABS input-output data (which describes the key economic parameters of the non-residential construction industry in Australia), \$1 billion in new non-residential construction spending directly creates 928 construction jobs (in full-year full-time equivalent terms), with average labour costs (including superannuation and other non-wage costs) of \$129,000 per worker. Collectively those workers receive annual compensation of \$119 million.

Indirect benefits (supply chain)

Most of the cost of a new construction project is allocated to purchases of various inputs, materials, and services obtained from the long and complex supply chain which feeds the construction sector in Australia.³⁵ The ABS Input-Output data measures those purchases, which generate new business for some 114 different defined industries. By this metric, \$1 billion in new construction generates \$718 million in new supply chain purchases, sourced from that myriad of suppliers. Based on unique employment coefficients in each of those 114 supply industries, those purchases in turn support a total of 1311 jobs, with aggregate wage payouts of \$129 million. It is interesting that new spending on construction supports more new work in supply industries, than in the construction sector itself—one of the reasons this sector is so important for overall economic growth. These upstream supply-chain impacts of construction are termed ‘indirect’ benefits.

Induced benefits (consumer spending)

Finally, a third dimension of the economic footprint of new construction is the increased spending by construction workers, and those in the construction supply chain, on the full range of consumer goods and services which they purchase with their earnings. These impacts are termed ‘induced’ benefits, and they further boost the overall economic impulse arising from new construction investments.

³⁴ See, for example, OECD, *OECD Economic Outlook Interim Report, March 2009*, (OECD, 2009), Table 3.2, https://www.oecd.org/content/dam/oecd/en/publications/reports/2009/03/oecd-economic-outlook-interim-report-march-2009_g1ghad01/eco_outlook-v2008-sup2-en.pdf.

³⁵ For this reason, the value-added (or GDP) created directly in the construction sector by a \$1 billion increase in total investment is only about one-fifth the value of the gross investment (\$204 million, according to the ABS input-output data).

On average, Australians spend about 65 cents of each dollar they earn on Australian-made goods and services (after deducting income taxes, personal savings, and purchases of imported products).³⁶ On that basis, the new wage income generated in construction and the construction supply chain by a \$1 billion increment in capital investment, supports an additional \$161 million in downstream consumer spending. This, in turn, supports an additional estimated 295 jobs in those downstream consumer industries (which tend, on average, to be more labour-intensive than jobs in construction and the upstream supply chain), and additional aggregate wages of \$29 million.

Table 1: Economic footprint of school capital projects			
Impact of \$1 Billion in Additional Capital Funding			
	Employment	Wages (\$m)	GDP (\$m)
Direct School Construction	928	\$119	\$204
Indirect (Supply Chain)	1311	\$129	\$718
Induced (Consumer Spending)	295	\$29	\$161
Total	2534	\$277	\$1,083
Source: Calculations from ABS data and other sources, as described in text.			

Table 1 summarises the results across these three dimensions of the economic footprint immediately dependent on the new construction spending. Across these direct, indirect, and induced channels, a \$1 billion increment in non-residential construction supports over 2500 new jobs, \$1.1 billion in new GDP³⁷ (for a positive GDP multiplier of 1.1-to-1), and \$277 million per year in additional labour income. These estimates are conservative compared to the findings of other input-output studies of the spillover economic benefits of construction (such as the UDIA report referenced above).

2. Labour market benefits (wages and productivity)

To estimate the longer-run benefits of improved school completion for wages, productivity, and health and social outcomes (the latter considered in the next sub-section), we need to simulate the impact of improved capital funding on student attainment. In this context, a seminal reference is the research of Jackson and Mackevicius.³⁸ As set out earlier in this report, this research was a meta-study of 31 design-based studies (credibly identifying causal impacts) of the impacts of school spending on test scores, high school completion, and subsequent higher education enrolment.

Jackson and Mackevicius created standardised metrics for developing comparable impact factors from each of the studies considered and then tested those findings for robustness. Their research concluded that an increase in school funding of \$1000 per student (in 2018 U.S. dollar terms) sustained over four years resulted in a 2.05 percentage point increase in school completion rates.

³⁶ This methodology is explained more fully in Littleton et al, 24-25.

³⁷ We assume that the increase in total indirect and induced sales arising from the \$1 billion construction project are reflected proportionately in new GDP, once second- and higher-order linkages are considered.

³⁸ Jackson and Mackevicius, 'What impacts can we expect'.

Importantly for the current context, they find no significant difference in that impact factor between current and capital funding. The report modelled the effects of the capital spending on an amortised basis (reflecting the expected useful life of buildings and school equipment). The fact that this research summarised the findings of so much existing research, and standardised its findings in a common benchmark parameter, makes it particularly appropriate for our current purposes.

Our Approach

To apply the Jackson and Mackevicius findings to the Australian setting, we must first adjust the relevant parameter to account for differences in national price levels, and for the impact of inflation over time. According to OECD data, \$1000 U.S. in 2018 had the same real purchasing power as \$1470 that year in Australia.³⁹ Inflation in Australia since 2018, meanwhile, has altered the real value of that amount of expenditure. Using the ABS's implicit price index for state and local government capital expenditure, we estimate that it would require \$1869 (Aus.) in 2025 to achieve the same real capital investment as \$1000 (U.S.) in 2018.⁴⁰ This conversion is used to adjust the impact parameter from Jackson and Mackevicius linking school capital spending to high school completion rates.

We then estimate the scale of funding that would be required to generate an equivalent increment in per capita funding across Australia's public schools, commensurate with the benchmark reported by Jackson and Mackevicius.

The 2.05 percentage-point improvement in high school completion reported by Jackson and Mackevicius was scaled to an increase in funding sustained for only four years. Our analysis, in contrast, imagines a permanent step increase in school capital infrastructure funding that is sustained throughout the foreseeable future, and that would be applied to all public schools (for the benefit of the entire enrolled student population), rather than a temporary four-year burst of funding. This approach has the advantage of avoiding the challenge of amortising capital spending over the expected lifetime of invested assets. But it needs to be scaled to capture the added benefits for school completion resulting from the sustained flow of capital funding over time (rather than a limited four-year period).

On the assumption that the benefits of increased funding for student achievement are not diminishing over the range considered,⁴¹ this implies that the per-student impact of sustained funding on school completion across the whole cohort of students can be scaled equivalently to the \$1000 (U.S. 2018 dollars) applied to a four-year cohort of students. For this purpose, we divide our benchmark simulated volume of new capital spending (\$1 billion per year) by 4/13 of the existing student population in Australian public schools⁴² (who are expected to attend school for 13 years). In essence, each student will benefit from a larger volume of capital funding if the new commitment is sustained throughout their school careers.

³⁹ OECD, 'Annual Purchasing Power Parities and Exchange Rates,' *OECD Data Explorer*, <https://data-explorer.oecd.org/>

⁴⁰ ABS, *Australian National Accounts: National Income, Expenditure and Product*, Table 5.

⁴¹ Jackson and Mackevicius find no evidence of diminishing returns in their meta-study (p. 414)

⁴² The school population is as reported by the Australian Curriculum, Assessment and Reporting Authority (ACARA), 'Student Numbers' <https://www.acara.edu.au/reporting/national-report-on-schooling-in-australia/student-numbers>. 4/13 of that population in 2025 was 804,124 students.

Using the same benchmark of a permanent \$1 billion increase in public school capital funding as was adopted in the previous section (on the current economic footprint of school capital investments), these conversions generate the following impact parameters.

A \$1 billion (Aus.) increment in capital funding is thus equivalent to a \$1244 increase in capital spending per student for 4/13 of the student population. That represents almost exactly two-thirds of the 2025 Australian-dollar equivalent of the \$1000 (U.S. 2018) benchmark constructed by Jackson and Mackevicius. Therefore, on the same assumption that the benefits of capital spending for student attainment are approximately linear (as indicated above), a *permanent* \$1 billion increase in annual public school capital funding can be expected to raise the school completion rate by 1.36 percentage points (two-thirds of the 2.05 percentage-point increase reported by Jackson and Mackevicius).⁴³

That parameter, reflecting the conversion of the Jackson and Mackevicius finding into the Australian context, can then be applied to the findings of the research reported in the earlier 2023 study to generate estimates of the benefits of higher school completion for wages, productivity, and health and social outcomes.⁴⁴

Wage and productivity benefits

Table 2 sets out the results applying this approach to calculate the wage and productivity improvements arising over time from a workforce composed of a higher proportion of high school graduates. As explained in the 2023 report the assumed increase in high school completion is applied year-by-year to each graduating cohort of students.⁴⁵ After a 20-year phase-in period, the share of the workforce with at least high school completion has increased significantly. Based on average wage differentials paid to high school graduates (relative to those who do not finish school), this produces measurable improvements in overall wage income.

The results are scaled to account for the increase in nominal price levels between 2022 (the base year for the calculations in the 2023 Report) and 2025 (the base year for this report). As shown in Table 2, aggregate wages paid grow by just over \$1 billion per year after a 20-year phase-in period (and by smaller amounts in the intervening years). As explained in the 2023 report, this is a very conservative estimate, in that it takes no account of the impact of high school completion on the likelihood that graduates will then enrol in subsequent higher education. The wage benefit is estimated solely on the basis of the wage gains achieved simply by finishing high school.⁴⁶

⁴³ Allowing a time lag for construction projects to be completed (Jackson and Mackevicius's modelling allows a 2-year lag for capital spending), the benefits for school completion of sustained improvements in capital funding would begin to be experienced within 2–3 years; they would be fully realised by the time a cohort of students has completed their schooling in better capitalised schools.

⁴⁴ Reflecting the real purchasing power of Australian spending in 2025, spread across an appropriate share of the public-school student population.

⁴⁵ Littleton et al, 40-43.

⁴⁶ Jackson and Mackevicius find that the impact of improved school funding is even proportionately stronger on rates of enrolment in higher education, than it is on high school completion.

Table 2: Cumulating annual wage and productivity gains		
	From One Percentage Point Improvement in School Completion (\$billion 2025)	From \$1b Annual Capital Spending (after 20 years) (\$billion 2025)
Wage Effects	\$0.75	\$1.02
GDP Effects	\$1.63	\$2.23
Source: Calculations from Littleton et al. (2023) and other sources as described in text. Estimates increases in aggregate wage payments and GDP after 20-years of the increased high school completion rate.		

The higher wages paid to high school graduates are founded on the improved productivity of better educated workers. However, as noted in the 2023 report, those higher wage payments exhaust only a portion (slightly under half) of that improved productivity. The rest is reflected in other factor incomes (including corporate profits and small business mixed income) that are also boosted by the higher productivity of workers with completed high school education.

On the basis of the existing factor distribution of GDP in Australia, the total boost to GDP resulting from the growing proportion of workers with completed high school education is more than twice as large, as the increase in wage payments alone (since wages constitute less than half of total GDP, and hence less than half of the productivity gains resulting from a better-educated workforce are paid to the workers). On this basis, we estimate the improvement in aggregate annual GDP (after 20 years of cumulating improvement in the share of the workforce with completed high school) to be \$2.23 billion.

3. Long-run social, health and fiscal savings

The third, and most challenging to quantify, category of economic and fiscal benefits arising from higher investments in public school capital are the long-run impacts of improved school completion on a wide range of health, social, and fiscal outcomes. There is abundant published international research showing that greater school completion is associated with better health outcomes, improved employability and earnings potential, less reliance on income support and other public benefits, reduced engagement with the justice system, and other benefits.⁴⁷ These impacts are admittedly challenging to quantify, given their diffuse and long-term nature. However, they are significant and real and therefore should be incorporated into policy decisions regarding the optimal scale of fiscal support for public schools.

In the 2023 report findings from two particularly relevant published studies were used to calculate the longer-term social, health and fiscal benefits of investing in public schools. One study from Lamb and Huo was based on Australian data.⁴⁸ Another study from McArthur-Gupta was based on Canadian

⁴⁷ Surveyed in Littleton et al. (2023).

⁴⁸ S. Lamb and S. Huo, *Counting the Costs of Lost Opportunity in Australian Education*, Report No.02/2017, (Melbourne: Mitchell Institute, 2017), <https://www.vu.edu.au/mitchell-institute/educational-opportunity/counting-the-costs-of-lost-opportunity-in-australian-education>

data.⁴⁹ Both studies measure the long-run social and fiscal savings associated with better school attainment in terms of percentages of GDP. Hence these findings are easily applicable to our 2025 Australian context. These two studies set out a wide range of potential social and fiscal impacts, which is appropriate given the high level of uncertainty that exists regarding the precise quantitative scale of these effects.⁵⁰ For reasons explained in the 2023 report, the most likely outcome in Australia lies in the middle of this wide range.

Our approach

As in the preceding sections, we scale the expected findings from this previous literature to match the capital spending benchmark we are simulating (a sustained \$1 billion increase in capital spending, measured in 2025 Australian dollar terms), and the 1.36 percentage point improvement in high school graduation expected to ultimately result from that permanent enhancement in school capital investment.

On that basis, as indicated in Table 3, we anticipate that the social and fiscal savings from higher school completion arising from improved school capital infrastructure would range between 0.01% and 0.14% of GDP. This is equivalent to between \$0.25 billion and \$4 billion in GDP (benchmarked against Australia's 2025 GDP). Again, this is a wide range, reflecting the quantitative uncertainty surrounding the specific impact factors utilised. However, there is no doubt from international research that better school completion will generate improvements in all of these social outcomes, that in turn generate significant fiscal savings for government.

Table 3: Long run social and fiscal benefits from improved school completion		
	From One %-age Point Improvement in School Completion	From \$1b Annual Capital Spending
In % GDP		
Lamb & Huo	0.007%	0.009%
McArthur-Gupta	0.105%	0.144%
In \$Billion (2025)		
Lamb & Huo	\$0.18	\$0.25
McArthur-Gupta	\$2.92	\$3.99
Source: Calculations from Littleton et al. (2023), Lamb and Huo (2017), McArthur-Gupta (2019), and other sources, as described in text.		

⁴⁹ A. McArthur-Gupta, *The Economic Case for Investing in Education*, (Ottawa: Conference Board of Canada, 2019).

⁵⁰ The McArthur-Gupta impact factor is much larger than the Lamb and Huo estimates.

Combined economic and fiscal benefits of school capital infrastructure funding

In this section we have set out the projected economic gains from a sustained increase in Australian public school capital funding, across three channels of economic benefit arising from current spending including

1. The immediate economic footprint of public schools.
2. The improvements in employability, earnings potential, and productivity arising from a workforce strengthened with a greater proportion of school graduates.
3. Economic and fiscal benefits arising from better outcomes in health, social welfare, and criminal justice thanks to a better educated population.

Table 4 describes the combined economic gains across these three channels:

Table 4: Combined economic benefits from \$1b annual capital spending	
Source of Benefit	GDP Impact (\$ billion)
Direct and Spillover Economic Footprint	\$1.1
Wage and Productivity Benefits	\$2.2
Social and Fiscal Benefits	\$0.25 to \$4.0
Total Benefits	\$3.5 to \$7.3
Source: Calculations from Littleton et al. (2023), ABS data, and other sources as described in text.	

The direct economic stimulus arising from school construction projects is experienced immediately, including its far-reaching impacts through the construction supply chain and the downstream consumer goods and services sector. The other benefits--for labour markets, productivity, and health and social outcomes--are experienced more gradually over longer time periods, reflecting the lifelong impact of improved educational attainment on employability, earnings, and life success. Ultimately, however, those long-run benefits are large.

In total across the three categories of simulated benefits, we expect that a sustained \$1 billion increase in public school capital funding would ultimately generate between \$3.5 billion and \$7.3 billion per year in GDP benefits, experienced across all stakeholders: including the construction industry and its supply chain, downstream consumer industries, improved labour market performance, improved productivity (benefiting employers as well as workers), and substantial fiscal benefits for government.⁵¹

⁵¹ The direct, indirect, and induced economic benefits from new construction are experienced immediately but will be sustained on assumption that the step increase in capital spending is maintained. The labour market and social/fiscal benefits take longer to be realised. The estimates in Table 4 estimate those impacts after a 20-year

Of course, the greatest benefit of these investments is experienced by the students themselves, who receive a higher quality education, and as a result are better positioned to achieve financial, personal, and social success to the utmost of their potential.

The fiscal impacts for government itself from this program of enhanced capital funding are significant and attractive. In return for facilitating this improvement in public school infrastructure, government benefits from a stronger economy, with higher wages, and reduced health and social expenditures.

Keep in mind that the broad government sector in Australia (including federal and state levels) takes in some 35 cents of each dollar of GDP in gross income, collected via all revenue channels.⁵² On that basis, even the low end of the range of combined GDP impacts described in Table 4 would stimulate incremental revenues for government well in excess of the \$1 billion annual capital investment we have simulated.⁵³

phase-in period; smaller but still significant benefits would be experienced in the latter two channels sooner than that.

⁵² Including personal, corporate, and value-added taxes, user fees, investment income, and others. Calculations from ABS, 'Australian National Accounts: National Income, Expenditure and Product,' Tables 3 and 17.

⁵³ Assuming a stable gross government revenue share of GDP, the improved economic outcomes from the sustained improvement in school infrastructure funding would generate between \$1.2 billion and \$2.6 billion in incremental government revenues, more than the simulated \$1 billion annual investment.

Conclusion

The benefits that quality school infrastructure can bring to student achievement, teacher retention, and community satisfaction has been documented both in Australia and overseas. Investing in higher quality school buildings and facilities is vital in affirming the lifelong potential of public school students, it helps to address inequality, and it produces a stronger economy and society.

In this paper we have extended the picture of the substantial benefits of investment in public school infrastructure, showing that increased funding to provide better public school infrastructure pays off in improved student achievement, a stronger economy, and better budgetary outcomes. We have quantified the benefits of this investment. A \$1 billion increase in public school capital funding would generate between \$3.5 billion and \$7.3 billion in GDP benefits.

Spending on public schools' infrastructure is very much an investment for government, not a cost. Australia can afford this investment. It will pay off in economic and fiscal terms, as well as human and social terms.

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