

Briefings

Thought leadership for the independent schooling sector

VOLUME 28 | ISSUE 4

CREATING VALUE: Maximising the Return on Investment in Educational Facilities

Foreword

In the realm of education, the importance of creating environments that foster learning and growth cannot be overstated.

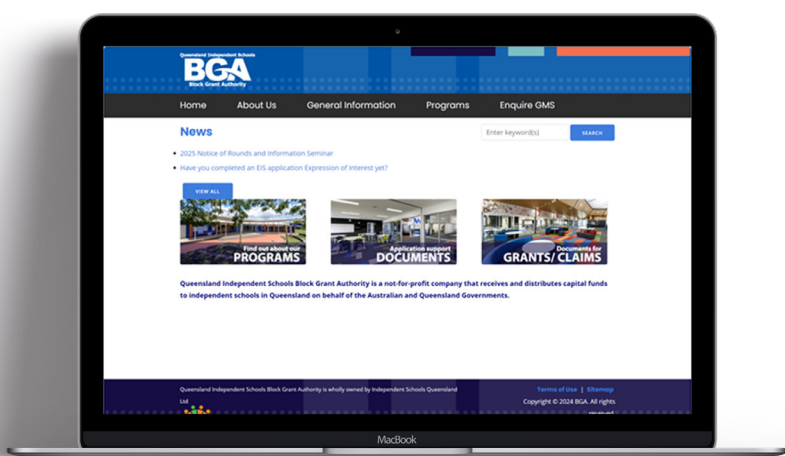
CREATING VALUE: Maximising the return on investment in educational facilities, delves into the strategic considerations that schools must navigate to ensure their construction-related expenditures yield the highest possible returns.

A school's most substantial investment, second only to staffing, lies in its physical infrastructure. Whether it involves constructing new buildings, refurbishing existing ones, or maintaining current facilities, the goal remains the same: to achieve a value-for-money outcome. This outcome is not solely about economic efficiency but also encompasses social benefits, ultimately centring on the students.

A value-for-money approach needs to balance both economic and social outcomes. Economically, it means saving dollars that can be redirected towards enhancing teaching and learning.

Socially, it involves creating spaces where students can thrive, ensuring that their voices, along with those of their teachers, are heard and valued. The built environment thus becomes a catalyst for educational excellence.

This article outlines eight key value principles that schools can adopt to maximise their return on investment in educational facilities. By focusing on these principles, schools can ensure that their construction-related projects not only meet immediate needs but also contribute to long-term educational success. These insights provide a roadmap for schools to navigate the complexities of facility investment, ensuring that every dollar spent translates into meaningful educational outcomes.



www.bga.qld.edu.au



CHRISTOPHER MOUNTFORD

*Chief Executive Officer
Independent Schools Queensland*

CREATING VALUE: Maximising the return on investment in educational facilities



GARY ADSETT
General Manager
Queensland Independent Schools
Block Grant Authority

Introduction

A school’s highest investment after staffing is construction-related, whether building a new facility, refurbishing an existing one, or undertaking building maintenance. As with any investment, there is a desire to achieve a value-for-money outcome to maximise the return on investment. When value is maximised, research indicates that:

- Academic progress can be improved by 16–25%¹
- Test scores can be up to 11% higher than in poorly designed buildings²
- Students are 26% and 20% faster in reading and math, respectively, when daylight is at an optimum level within a learning space³
- Staff recruitment and retention are improved as a consequence of improved morale⁴
- Student motivation and effective learning time increase⁵.

- Therefore, this briefing seeks to do two things:
1. Define what represents a value-for-money educational facility
 2. Outline key principles to create value.

What is Value for Money?

Figure 1 (page 3) demonstrates that a value-for-money outcome has both an economic and a social outcome focus. In short, the economic focus seeks to ensure that the building is constructed on time and within budget, while also ensuring that the building’s whole-of-life costs are minimised. Social value is more complex. It involves ensuring that educational and architectural design are highly aligned. It seeks to ensure that spaces created are both safe and accessible. It also explores how buildings can be used by the community as a social infrastructure benefit.

Whether economic or social, the desired overall impact is to be student-centred, where teacher and student voices are elevated so that educational outcomes are maximised. Economically, dollars are saved so more funds can be allocated to teaching and learning. Socially, the built form contributes to the creation of an environment where students thrive and are granted the opportunity to be their best.

When these dual focuses are combined, a value-for-money educational facility is defined as follows:

- A. The construction contract price is competitive with the current construction market and primary and secondary consultant costs are within established benchmarks.

- Notes:
- Knowledge and continuity of consultants and the construction contractor with the site on which the facility is to be constructed are key considerations in achieving the aforementioned outcome.
 - A quantity surveyor is involved throughout the design and construction process.

- B. The building is fit for purpose and remains so throughout its use.

- Notes:
- Fit for purpose means that the use of a facility is aligned with pedagogical practice/educational philosophy.
 - School leaders, teachers, and students are involved in the design process.
 - It is anticipated that the design and construction of a facility are likely to integrate a level of agility and flexibility to achieve fitness for purpose over the longer term.
 - Where possible, agility and flexibility also incorporate a capacity for a facility to be used beyond school hours and school terms.
 - Before deciding to construct a new building, can an existing building be reimaged?

- C. Lifecycle costs to maintain and operate the completed facility are minimised.

- Notes:
- The school has or develops expertise in managing lifecycle maintenance.
 - While the contingent liability on a funded building is 20 years, accounting practice typically ascribes a 30 to 40 year life for each building. Consequently, the lifecycle duration should be at least 30 years.
 - It is anticipated that design elements incorporating environmental sustainability are important to reducing lifecycle costs.
- D. The finished project enables access to all and is safe and secure.

- Notes:
- Access means design that promotes inclusive experience and access.
 - Time parameters, established at the strategic definition stage of the project, are met concerning the design, construction, and activation/occupation of the building.

- E. Budget parameters, established at the strategic definition stage of the project, are met, and should value management need to be undertaken through the delivery of the project to achieve budget, it does not negatively impact the outcomes stated above.

- Notes:
- School leaders develop or can positively contribute to designing, constructing, and activating new or refurbished buildings.
 - It is recognised that the design process should not be rushed or underfunded as the first 15% of a project cost has an influence on 90% of the total project cost.

FIGURE 1: SUMMARY OF A VALUE-FOR-MONEY DEFINITION IN TERMS OF OUTCOMES

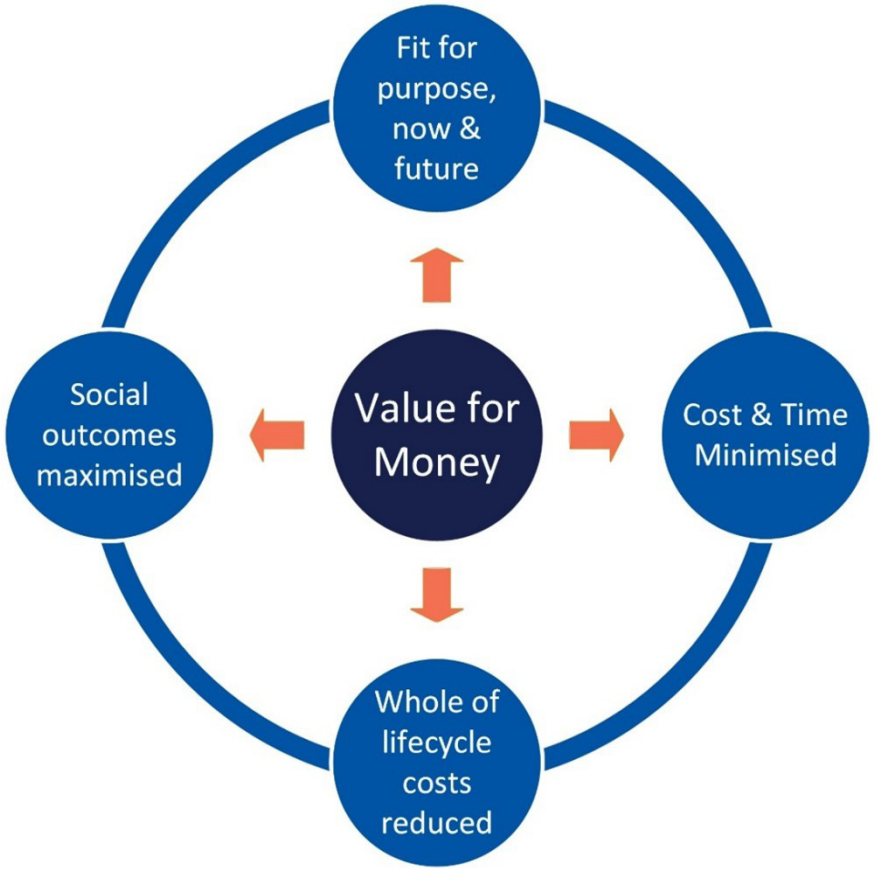
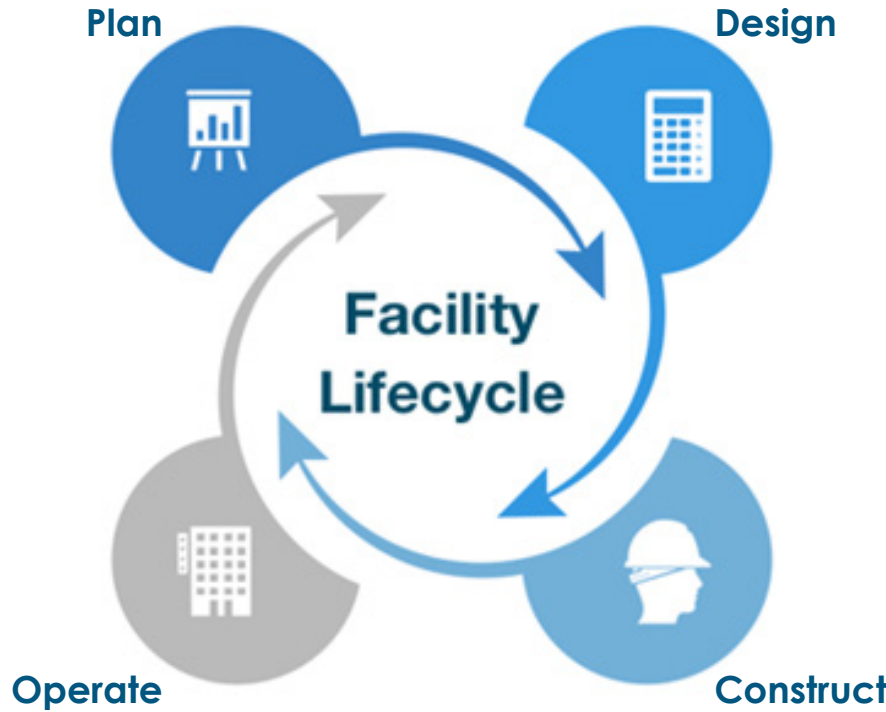


FIGURE 2: FACILITY LIFECYCLE



CREATING VALUE: Maximising the return on investment in educational facilities

Creating Value Principles

Using the following eight principles has been demonstrated to create value. However, before outlining each key principle that creates value, it is important to understand that delivering educational facilities is a lifecycle and is best described by Figure 2 (page 3).

This lifecycle has sub-lifecycles for each facility project and is best described by the quality design and delivery process depicted in Figure 3 (page 5). Key elements within this process will be described within the following principles.

When incorporating the delivery of a master educational facility lifecycle with the delivery of each educational facility within the lifecycle, it is known as the facility lifecycle development program.

Elevate purpose

This is the first key principle and evolves out of a school's strategic plan. Purpose is the facility lifecycle development program's north star. Consequently, purpose should be elevated and kept at the forefront of every key decision concerning the facility lifecycle development program. In doing so, purpose will be tested, refined, strengthened, better understood, and owned by more people. This in itself adds value.

Secondly, when tensions emerge during the delivery of the facility lifecycle development program (i.e., funding constraints, lifecycle staging), these will be more effectively resolved by elevating purpose.

From a design and construction perspective, the strategic plan (or related Board strategic decision-making) should provide guidance on:

- School educational philosophy and pedagogical approach.
- What new curriculum areas, if any, will be added to the school's subject offering.
- Student enrolment targets.
- The type of commitment to the creation of safe and inclusive spaces, over and beyond that required by legislation.
- The lifecycle cost approach that will be used during the delivery of the facility lifecycle development program. For example, there should be a process on how decisions will be made regarding the tension of reducing construction costs and the retention of building elements (i.e., sustainability elements) during any value management exercise.
- How facilities will be used (or not) to support the school's engagement with the local community.
- What financial ratios must be upheld to ensure the school's ongoing profitability, solvency, and sustainability.

Engage as a school leader

As described in the introduction to this article, well-designed educational facilities do contribute to maximising educational outcomes. This is achieved when there is a strong overlap between a school's education design (i.e., educational philosophy/pedagogy) and the architectural design. Research indicates that this overlap is achieved when school

leaders (including the Board) positively contribute to the design, delivery, and ongoing use of the facility lifecycle development program.

Consequently, it is important to resist the temptation to delegate all design, construction, and activation responsibilities to consultants. To do so is to lower the creation of value on the second-largest investment that a school has.

To build the capacity of school leaders to make a positive contribution to the design, construction, and activation of a new or refurbished educational facility, Queensland Independent Schools Block Grant Authority (BGA) is in the process of developing the following guides/toolkits:

- Master Plan Guide – available from February 2025
- Sustainability Guide and Toolkit – available from February 2025
- Post Occupancy Evaluation Guide – available from February 2025
- Design Quality and Delivery Guide – available from February 2026
- Impact Guide – available from February 2026.

The best time and money is spent at the start of the project

Figure 4 (page 5) is insightful as it demonstrates that time and money spent at the start of a project have the most influence on the financial outcome of a project. Therefore, value is created by the investment of time and funds at the start of the project.

Value is created as significant design changes can be made at the start of the project with little impact on the total project cost. In contrast, design changes later in the delivery of the project have a significant impact on cost. Therefore, the best time and money should be spent at the start of the project.

FIGURE 3: SUB-LIFECYCLES FOR EACH FACILITY PROJECT

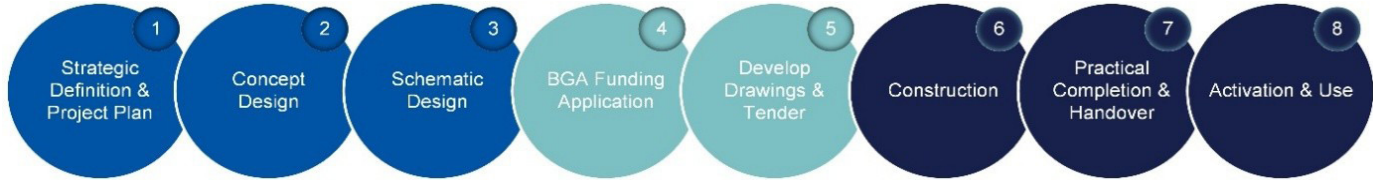
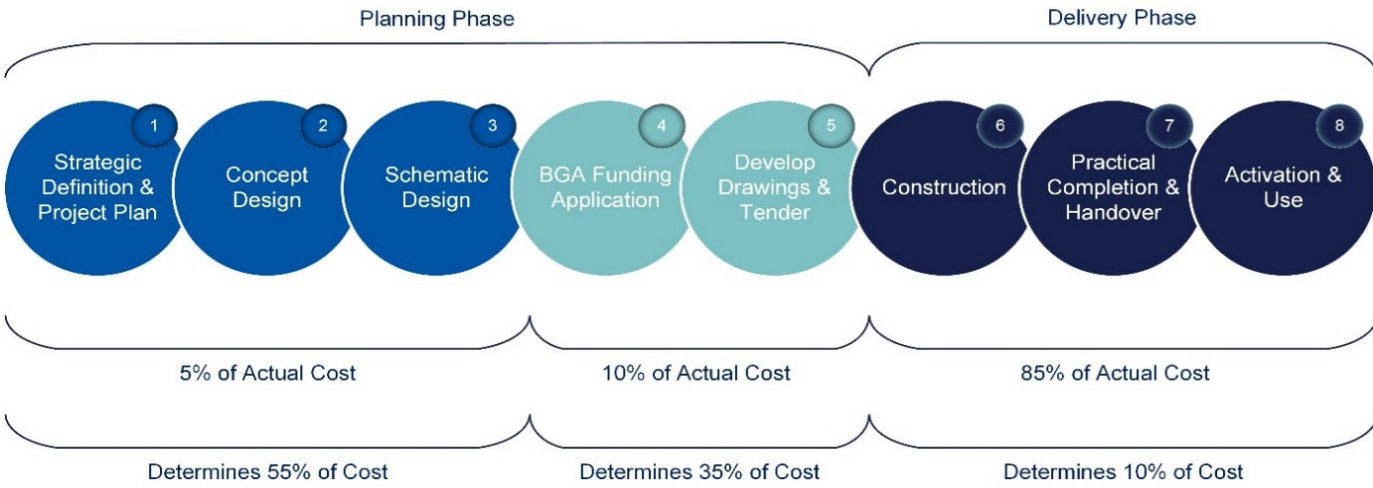


FIGURE 4: TIME AND MONEY AT THE START OF A PROJECT



Plan well

Critical to the delivery of the facility lifecycle development program is the development of a site master plan. The strategic definition and project plan as shown in the image immediately above are informed by a school site master plan.

The strategic plan informs the master plan and the latter acts as the link between the strategic plan and the design of any new facility. As such, both plans must be living documents and reflective of the current strategic intent of the school. If it is not, the design of any new building should not be undertaken until they are.

A comprehensive master plan should include the following:

- **Strategic Focus:** Reference to the school's strategic plan, including enrolment target, position on new versus refurbished construction, and risk appetite.

- **Design Principles:** Design principles that have guided the development of the site master plan and will guide the design of new and refurbished facilities noted in the master plan.
- **Site Analysis:** Existing site audit (i.e., condition, usage assessments); town planning impacts, if any; environmental impacts, if any; analysis of people and traffic movement across the site; site infrastructure (i.e., location, condition, and capacity).
- **Future State:** Master plan design shown in development stages; identification of site infrastructure improvements that need to be made to support the delivery of the site master plan; cost plan (i.e., use of a Quantity Surveyor).

A project plan is the next critical document. It draws together strategic intent and key elements related to the specific parts of the master plan. For example:

- **Project scope:** What spaces are needed and the inter-relationship of these spaces to one another. Note: This information should be informed by the site master plan.
- **Commitments:** What commitments will be upheld (i.e., environmental, safe and inclusive, community engagement).
- **Site infrastructure:** What site infrastructure (i.e., electrical, hydraulic, civil) needs to be undertaken to support the delivery of the facility.
- **Town planning considerations:** Town planning considerations, if any, that are triggered by the proposed project.
- **Project timeline.**
- **Project budget.**

It is important to note that these elements of the project plan need to be revisited at each stage of the BGA Design Quality and Delivery Process.

CREATING VALUE: Maximising the return on investment in educational facilities

The concept design is the third phase of planning and is the initial architectural design for a project. It gives an understanding of the inter-relationship of spaces as well as aesthetic considerations. It is at this stage of the project that iterations of the design take place based on input from:

- **Users:** It is vitally important that users (staff and students) have an opportunity to provide feedback on the design through its various iterations at this stage. If possible, the development of a prototype is very helpful. For example, mark out the proposed design of a space on a court, move furniture into it, and then teach from the space. Alternatively, convert what is no longer fit for purpose space to test a design approach.
- **Secondary Consultants:** The role of these consultants is to provide preliminary technical input to support the development of the design concept.
- **Quantity Surveyor:** The role of this consultant is to give an understanding of project cost. There is no use in continuing with a concept plan if its cost is significantly over budget.
- It is important that this team understands and can be aligned with your school's mission, vision, and values. It is also important that they understand and can support the school's strategic intent as it relates to educational delivery, access and safety, environmental aspirations, and community engagement. Consequently, time should be spent on these activities when selecting and then inducting consultants once engaged. This then means that the cheapest consultant fee might not mean the best consultant as they may not ultimately provide the greatest value.
- Like any team that is aligned, all involved understand the role that each of them plays in achieving a project goal. They are interested in continuous improvement, so there is a focus on lessons learned, which leads to greater outcomes in the second and subsequent projects.
- The construction contractor is included as they need to understand the mission, vision, values, and key strategic aspirations. If they do, it grants them the opportunity to suggest relevant value management options.
- While a contractor often wins work via a tender process, contractor continuity often adds value. As such, a good contractor can position themselves for future work by communicating to the school and design team the construction challenges related to a specific site

Select a strong team

It is important to think about the design and construction team being an extension of the school's team. The roles that generally make up the design and construction team are demonstrated in Figure 5 (page 7):

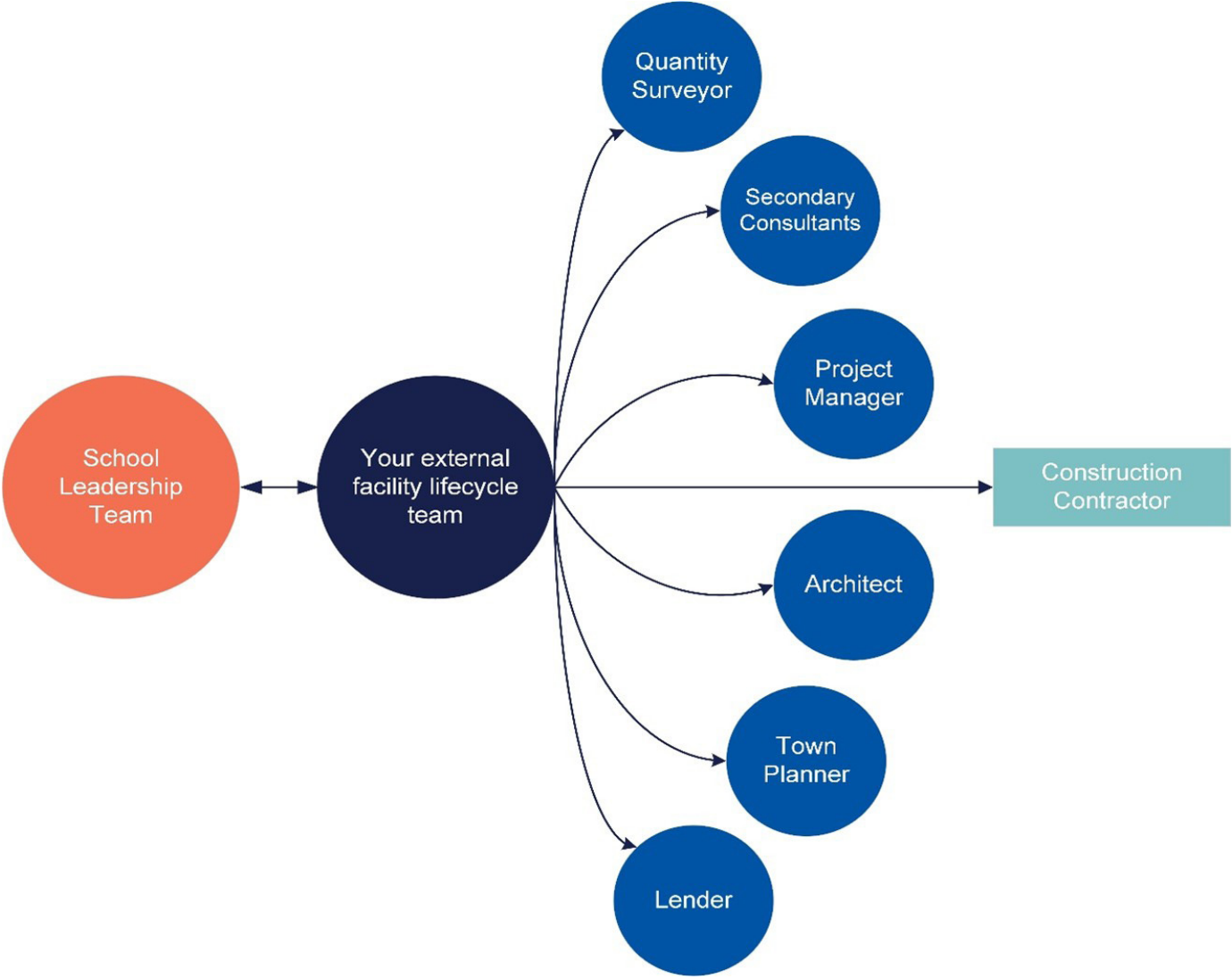
at the end of a project. This leads to the school and design team having a better understanding of what would be an appropriate cost of preliminaries related to future projects. This is important as a prospective contractor may go low on preliminaries not knowing site conditions, whereas the previous contractor has a higher price due to known and understood site conditions.

Allocate sufficient time

While the best time needs to be spent at the start of the project, sufficient time should be allocated to deliver the facility lifecycle development program and individual projects within it. For example:

- Site master plans generally take six to 12 months to develop.
- The planning phase of a project can take between six to 12 months. The length of time is less when an approval to develop is already in place.
- Depending on the size and complexity of a project, it can take six to 15 months to construct.

FIGURE 5: EXAMPLE OF A DESIGN AND CONSTRUCTION TEAM



Prepare to activate

Imagine the following situation:

A school has amazing teachers. These teachers are obtaining strong educational outcomes from teaching spaces that do not support modern pedagogy. The school follows a best practice approach to design spaces that have staff buy-in and support modern pedagogy. Consequently, there is much anticipation as staff and students watch the new building being built and then much excitement when staff and students move into the building once finished.

However, three months after moving into the building, teachers are not using the spaces in the manner that had been hoped. Rather, they have reorganised furniture to make the rooms look like the old teaching spaces. What has happened?

Research indicates that teachers who have mastery in an existing space need to be equipped and have ongoing support to have mastery in a new space. If they are not equipped, they resort back to the previous pedagogical practice and classroom set-up to gain mastery.

Consequently, time and money must be spent on equipping teachers to gain and sustain mastery in a new teaching space that supports modern pedagogical practice. If this does not happen, the educational return on the financial investment is significantly diminished.

CREATING VALUE: Maximising the return on investment in educational facilities

Take the right maintenance approach

Queensland University of Technology, together with other stakeholders, led an Australian Research Council project to identify innovative procurement theories to optimise ‘value’. One of the findings from the report was that Principals should be released from the responsibility of facility maintenance, and it be given to a person who has the knowledge and capability in this area.

To explain why this is important, Figures 7 and 8 (page 9) are helpful:

Generally, when financial people think about building depreciation, they take a straight-line approach. However, the condition of a building typically does not reduce on a straight-line basis. Rather, the condition typically follows a consumption-based curve where a building could be categorised as in ‘near new’ and then in ‘good’ condition for a significant period. It is then interesting to note that without intervention, the condition of a building can slip from being in ‘good’ to ‘very bad’ condition in a relatively short period.

This is why it is important to have specialists on the school team who can both maintain buildings and then make necessary capital interventions at the right time, so a building remains fit for purpose and costs related to these processes are minimised. As the image above demonstrates, a short delay in intervening can almost double the cost of bringing a building back to being near new.

There is one other point that I would like to make on this theme of investing in existing and new facilities. Research currently being undertaken by John Somerset indicates that schools should be allocating a cash amount that is twice the amount of its building depreciation to ensure the schools have facilities that are fit for purpose (i.e., aligned to current pedagogical practice).

Evaluate the investment

A post-occupancy evaluation enables school leaders to determine if an educational facility is working for staff and students, this should be done at key junctures during the occupancy of the building. For example, after the first year, the third year, and after 10 years to compare the information to the intended purpose of the building as outlined in the design definition phase of the project. Such an evaluation also considers furniture and fittings, noise, and light.

A holistic evaluation can be used to review the current master plan to see how effective it is in achieving the school’s strategic outcomes. Data from the post-occupancy evaluation can also be used to plan/inform the next facility project. By understanding the primary users’ needs this can inform future build designs and the alignment with the master plan.

Another element of a post-occupancy evaluation is that it can be used to gather student voice/opinion about how the building is working for them, or not working. It can also be used to evaluate student satisfaction/enjoyment and/or collaboration in the spaces. Furthermore, it can be used to engage with staff to evaluate spaces and provide an opportunity to design staff induction programs and create professional development to support pedagogical approaches to enable spaces to be maximally utilised. Thereby connecting learning space theory to teaching practices.

BGA is in the process of developing the following guides/toolkits:

- Master Plan Guide – available from February 2025
- Sustainability Guide and Toolkit – available from February 2025
- Post Occupancy Evaluation Guide – available from February 2025
- Design Quality and Delivery Guide – available from February 2026
- Impact Guide – available from February 2026.

Conclusion

In summary, the briefing on value-for-money considerations for educational facilities highlights the importance of maximising the return on investment in construction-related projects. Key points include:

- **Maximising Value:** Achieving value-for-money outcomes can significantly improve academic progress, test scores, and student motivation while enhancing staff recruitment and retention.
- **Defining Value-for-Money:** A value-for-money educational facility balances economic and social outcomes, ensuring buildings are constructed on time, within budget, and aligned with educational and architectural design principles.
- **Creating Value Principles:** The article outlines eight key principles to create value, emphasising the importance of a comprehensive master plan, strategic focus, and engaging school leaders in the design and construction process.

Footnotes

1. Barrett, P., Zhang, Y., Davies, F., & Barrett, L. (2015). *Clever classrooms: Summary report of the HEAD project*.
2. *The Value of Good Design*, Published in 2002 by the Commission for Architecture and the Built Environment (CABE).
3. RIBA and Hay, R., S. Bradbury, D. Dixon, K. Martindale, & F. Samuel, A. T. (2016). *Pathways to POE*, Value of Architects.
4. *Creating excellent primary schools - A guide for clients*, Published in 2010 by the Commission for Architecture and the Built Environment (CABE) & *Building Performance: An Empirical Assessment of the Relationship Between Schools Capital Investment and Pupil Performance*, PricewaterhouseCoopers Research Report No 242, 2000.
5. Architect, T. O. o. t. V. G. (2015). *Good Design + Education*.

FIGURE 7: EXAMPLE OF DEPRECIATION

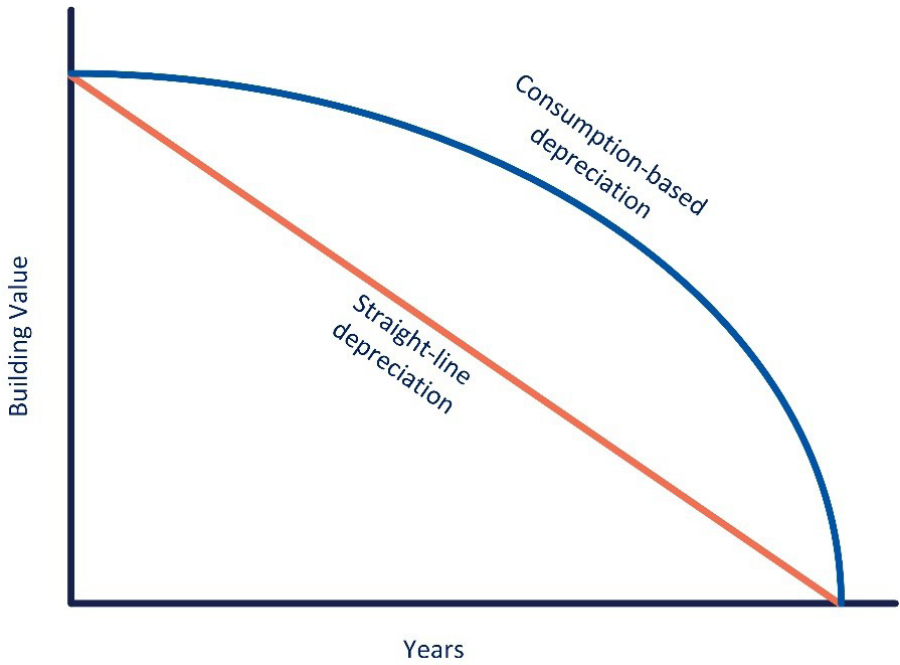
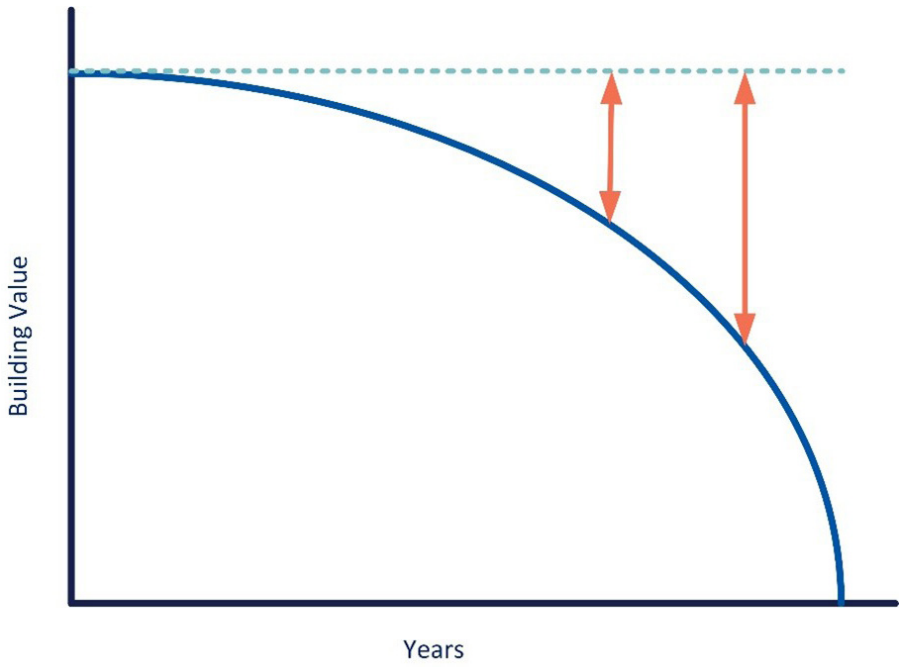


FIGURE 8: EXAMPLE OF DEPRECIATION WITHOUT INTERVENTION



ISQ thanks its 2024 Alliance Partners

FINDEX



Disclaimer:

The information contained in this publication is to the best of our knowledge and belief correct at the date of publication. However, no warranty or guarantee is or can be given by Independent Schools Queensland or any member of its staff, and no liability is or can be accepted for any loss or damage resulting from any person relying on or using the information contained in this publication.

Licensed under NEALS

Independent Schools Queensland Ltd
ACN 614 893 140 ABN 88 662 995 577