32

PHYSICAL LITERACY AND ENVIRONMENTAL DESIGN

Trevor Smith, Andy Mytom, Natalie Houser, Janis Bilau, Dean Kriellaars, Sarah Noble, Sam Fenton, Grim Jernudd, and Tom Englén

One of the core pillars of physical literacy is the need for every physical activity experience to be positive and meaningful for every individual (Sport England, 2023). To achieve this, the activity needs to create a positive atmosphere, physically, emotionally, and socially, and this can be greatly influenced by the environment in which it takes place. "Who we are with" matters greatly. But so does "where we are". As such, it is important to think about the nature and the quality of the physical environment as well as the emotional and social one. This means we need to be able to influence the design, look and feel, and provision of the places in which activity happens.

There is a growing body of work internationally which seeks to influence planners, designers, and developers to embrace the principles of physical literacy in the creation of a vibrant and dynamic "public realm". This includes open spaces, formal and informal play facilities, pitches and courts, pavements, pathways and access routes, streets and roads, trails and open waterways.

Active environments are being promoted as a means to help communities grow into a physically active lifestyle, thus supporting improvements in their physical, social, and emotional health and well-being. The multidimensional construct of physical literacy can be a powerful ally in design through the construction of positive challenges for all.

Physical literacy and environmental design concepts

Based upon the International Physical Literacy Association's (IPLA, 2017) definition of physical literacy, physical literacy has also been described as a process or cycle, which we like to refer to as an engine for social innovation. The definition and this engine support the holistic development of a person through person-context interactions that occur within and between movement contexts (Agans *et al*., 2024). The physical literacy engine is highly consistent with the most recent and evolved consensus statements on physical literacy (Sport England, 2023). Both the engine and Sport England's consensus statement highlight the importance of building people's relationship with movement, as opposed to fear-based approaches based on the prevention of non-communicable disease or the contribution that active travel makes to promote environmental sustainability, for example. Nonetheless, physical literacy can be viewed as the antecedent of becoming physically active (Cairney *et al*., 2019) through fostering motivation and positive valuation for actively participating in society. In this way, physical literacy provides a new lens for the design of

 DOI: 10.4324/9781032703466-40

places and spaces. At the individual level, the physical literacy engine can be activated, inactivated and even deactivated, leading to positive, neutral, and negative movement experiences (Houser and Kriellaars, 2023; Woolley, Houser, and Kriellaars, 2024). A community, through its places and programmes, should provide for the net accumulation of positive movement experiences leading to an overall positive valuation by the community dweller, ultimately leading to association of happiness with movement independent of the participant's age, ability, culture, sex, and/or gender.

The following principles of physical literacy-enriched environmental design (PLEED) have been derived based upon the physical literacy definition, engine, and consensus statement. The principles are briefly described below.

1 **A level of challenge for all levels of ability:** This principle refers to developing movement spaces that allow for all individuals in a community to find a level of challenge suitable to their abilities. This principle is largely based upon optimal challenge theory (Abuhamdeh and Csikszentmihalyi, 2012) in which a suitable level of challenge is necessary for engagement; "too hard I'm out", "too easy I'm bored", "just right - I am in!" Importantly, the challenge presented not only refers to the physical domain but also social, creative, and psychological domains. For instance, an environment may present a suitable physical challenge but be situated in a more demanding social context, which may be unsuitable for the participant to engage in. Through the construction of positive challenges, the designer must also consider a key element of physical literacy, termed competence-confidence coupling. The movement opportunities provided in spaces should allow for the development of new competencies, but also intentionally link the development of confidence. Confidence is a critical contributor to continued participation, as well as a key factor in improved performance and reduced injury risk. For instance, having many entry points based upon ability allows for engagement, but critical for competence-confidence coupling is to have nearby progression possibilities.
2 **A type of challenge for all interests:** Within a movement space, there should be different engagement opportunities that cater to different interests, allowing for users to participate based upon the experience they are seeking. This principle demands consideration of not only "who is" moving in a facility or community, but more importantly "who is not". This principle especially aids in the design processes that are initially based upon a single activity type. By adding the consideration of "types of challenge" that could be offered in the space, the designed spaces can become attractive for a more diverse set of interests. This principle can also be used to address the issue of designs that create more spectators than active participants.

   We know that enjoyment arising from the recollection of the movement participation is a key factor in fostering motivation and valuation of a specific movement context. PLEED principles 1 and 2 both are key in developing enjoyment through purposeful design by providing experiences which are distractions from life (fun) or experiences where a participant can learn something new (pleasure). Designers must consider both fun and pleasure as key features for fostering an enjoyable experience.
3 **Connection:** A critical consideration for design based upon physical literacy is the notion of providing different forms of connections, as illustrated in the physical literacy cycle (Houser and Kriellaars, 2023). Relatedness is a basic human need, and connections are the foundation for fostering relationships and creating meaning and purpose. Participants can have connections to people, to groups, to places, to objects, and other living things. In design of spaces and the programmes which run in those spaces, various forms of connection should be considered at the outset, as opposed to as an afterthought. For instance, connection to people is not simply in the form of friendship but also could arise from familiarity of people moving in the same

space. This type of familiarity in movement is known to foster "trust", contributing to safety and a sense of belonging. Finally, designers must also consider that the type of connection a participant has might vary through time, even in one movement session.

4 **Movement intersection:** Movement intersection is a design approach to foster proximity of many types of movement and a diverse set of participants. We often design spaces segregated by function, level of ability, or based on culture or gender norms. Movement intersection requires the intentional consideration of overlapping different types of movement interests, multiple levels and types of ability, different cultures, etc. Intersection provides for vicarious experiences which then may lead to exploration of new movement opportunities and can also foster empathy for others' ways of moving, creating a sense of belonging for all. One goal of movement intersection is that all people should feel comfortable moving with all others independent of age, ability, or culture.
5 **Movement opportunities:** In a movement-suppressed culture, the simple addition of convenient access to movement opportunities usually provides increased movement. Often, people have to leave their community to be active, which is not ideal. Being able to move "right from your back door" is an important consideration for active communities. This can manifest in many other sectors, such as in elementary schools where hallways can be enhanced to provide movement experiences ("Don't walk in the hallways"). Giving everyone an equal opportunity to move within a community that suits their user movement interests is critical. These movement opportunities should be made attractive to encourage initial and continued participation with easy access (e.g., 15-minute community). This also can help to reduce social determinants (time, resources) of being active in a community.
6 **Affordances in movement contexts:** Many designs utilise "drag and drop" features, instead of considering an environment where features can be viewed and used as affordances, where the participant can decide, "How can I use this space?" or "What can I use this space for?". This "possibilities" design thinking aids in the development of agency, movement exploration (problem solving and decision making by participants) and resilience (Jefferies, 2020; Houser and Kriellaars, 2023) through the fostering of movement exploration (Richard, Holder, and Cairney, 2021).
7 **Neutral risk perspective:** Many "design and use" approaches are based upon "surplus safety - safe as possible" as opposed to "adequate safety - safe as necessary". Surplus safety can mitigate immediate negative outcomes but can then create serious medium and long-term negative outcomes by blocking the desired positive outcomes associated with the activity. A neutral risk perspective views that any activity can have positive and negative outcomes that are immediate or manifest over the long term for both the participant and the observer. In this way, risk is no longer viewed as "adverse" and to be avoided, leading to the development of healthy risk perspectives and fostering an explorative mindset.

These principles have been adopted and utilised in the design, building and assessment of places and spaces globally. These principles are complementary to current architectural approaches, and as such provide a disruptive lens to avoiding the status quo in design. Physical literacy provides for new ways of seeing and creating spaces, leading to new ways of knowing, and ultimately to new ways of being, relating, and acting. The overarching goal of physical literacy is the creation of spaces and programmes where all can belong through movement based upon the diversity of user abilities and interests in a community. Application of the principles in both public and private contexts within a community allow for all to find, develop, express, and be accepted for their movement voice(s).

Universal design, accessibility, and PLEED

PLEED principles can act in a highly complementary role to accessibility and universal design principles for the creation of inclusive spaces for people of all abilities. Universal design's overarching goal is to create or modify an environment so that it can be relevant and relatable for every individual by providing opportunity for everyone to communicate with/enjoy the environment. Accessibility's primary goal is to create an environment that is navigated without any barriers, physical or sensory, for any individual. Often unintentionally, both accessible and universal design approaches can leave a space with a very narrow band of challenges which can have two unfortunate consequences. The first is that it limits the user experiences for all people, which technically is non-inclusive. The second is that it creates an oppressive, public impression that people with different abilities are not capable or interested in having opportunities with a range of challenges. At the design conception stage, PLEED can aid in resolving these dilemmas. We provide an example (Kootenay Adaptive Mountain biking Facility, Kootenay Adaptive Sport Association, n.d.) where PLEED principles were combined with universal design and accessibility in a highly successful manner in the creation of a level of challenges for many levels of ability.

Towards a sustainable world

The World Health Organization's (WHO) identifies physical and health literacy as key elements for successful engagement of the population in movement for well-being (WHO, 2014). Further, good health and well-being is the third of the 17 Global Sustainability Goals, although most of the work related to Goal 3 is directed to improved health care, the overall objective is to ensure healthy lives and promote well-being for all at all ages (United Nations, n.d.). In this way, physical literacy has very strong alignment with this sustainable development global priority. Further, given that physical literacy is directed to holistic development through movement, this also makes physical literacy highly consistent with the development of the inner skills deemed essential for sustainability, termed the inner development goals (IDG, n.d.). Development of physical literacy of the population through cohesive design of places and programmes can aid in achieving the goals of social equity, health equity, and enhanced human potential and well-being.

Applying the principles across the world

Here we explore recent, current, and emerging practice in applying the physical literacy lens to environmental design. We hear from thought-leaders and deliverers from England (below), Sweden (below), Australia (below), and Canada (principles described above). We explore the parameters within which each has to operate – planning systems and "rules": key barriers and challenges – and we learn about how the physical literacy lens has emerged as a critical consideration in the design and analysis of places and spaces.

England

Building new developments

The planning system in England for new developments is a complex one, with a variety of players often active at the same time but not always playing the same game. Although national guidance exists, local planning departments each have their own local rules and criteria to determine

what is acceptable development. This, of course, creates inconsistent practice and discourages developers from adopting anything other than a "safe" approach when submitting plans for approval.

This situation is increasingly being challenged across the sector, including a central government review of approaches to and provision of facilities for play, and in one significant recent development, local planning authorities are now required to produce their own "design codes" which will spell out their aspirations for new developments, including the provision of public spaces. Increasingly, the principles of physical literacy are guiding design decisions, which are being led by enlightened developers and architects such as Lands Improvement Holdings (LIH), David Morley Architects (DMA), physical literacy advocates such as the IPLA and SPORTSMITH, and lobby groups such as Play England and Make Space for Girls.

LIH observes that landowners and master developers are:

> in the privileged position of being able to influence how the spaces in between [everything between the houses] are designed, delivered and activated. These spaces need to work for the benefit of the whole community and should enable the living of a healthy active life – one that adds significant additional value to a resident than that delivered simply by the bricks and mortar. We have all seen developments that don't deliver, either in part or in full, and we see that as a huge, wasted opportunity and negligent.
>
> *(Phillips, 2024)*

One way to address this reality is to create and apply simple frameworks and criteria which guide decision making and design. For example, LIH, DMA, and SPORTSMITH have developed a simple process to determine "Good Play Value" – based on physical literacy outcomes, which are intended to create positive relationships between people, places, and physical activity, and allow a quick and simple review of proposals prior to submission. These simple criteria explore the extent to which a scheme encourages all sectors of a community to be physical, creative, social, aware (environmentally, socially, and culturally), safe, and connected.

It is acknowledged that individual installations or spaces cannot be all things to all people. But by connecting spaces together and considering the widest possible outcomes from a single space, we move towards the creation of inclusive, intergenerational, multi-purpose provision.

In addition to the application of these outcome-based criteria, LIH takes the step of "holding back" on pre-determining the exact nature of a facility or space until the new community has begun to grow. By working with the residents, they co-create spaces and places which meet the community's needs and aspirations. This approach is often at odds with local planning authorities, many of which require fully worked-up plans in order to approve them.

Andy Mytom (DMA) suggests the following quick wins for others to follow this path:

- *Review "dormant" projects.* Many planning applications sit dormant for long periods of time between design and implementation. Andy recommends a retrospective review of these projects before they start, to overlay the principles of PLEED and make adjustments as necessary.
- *Planning Policy* should be adjusted to require developers to demonstrate awareness of and a response to the need to create active environments beyond the basic delivery of formal facilities and installations. Developers should seek to make the entire environment an active one and not restrict it to specific locations or activities.
- *Case Studies* should be identified to demonstrate good practice from across the world.

- *Better Local Partnerships* between developers, planning authorities, community groups, and residents should be encouraged to support the design and creation of environments which meet existing demand and create new opportunities for active participation.

Sweden

Commonly built design solutions for movement in schools and public environments like parks and playgrounds in Sweden include multi-sport arenas, playground equipment, and outdoor gyms. Relating to the PLEED principles, these affordances generally cater to one level of ability and one type of movement interest. They are often built in separate locations, labelled for specific user groups and seemingly safe.

However, a challenge to wide implementation of PLEED in Sweden springs from the varying translations and definitions of the physical literacy concept by different organisations and persons. There is currently no national consensus on the concept, which limits opportunities for innovation and implementation work.

The Change the Game knowledge journey of using physical literacy as a lens specifically for designing physical environments started in 2019, when the office of the Swedish government arranged a 24-hour workshop in Umeå with representatives and key stakeholders from all sectors and from all over the country. The event covered an introduction to physical literacy and a deep dive into the PLEED principles, delivered by Dean Kriellaars. The workshop used the intended development of "Norra Ön", a central part of the city of Umeå, as a case study for exploration of practical implementation of the concept (Umeå Municipality, 2025). Since, a growing interest in the PLEED principles has emerged all over Sweden and it is applied in more and more design projects.

One example is the "Physical literacy in public environments" project, funded by the Swedish national innovation agency. The project provided partners from different sectors and organisations with the opportunity to experiment and explore the concept's potential together (Vinnova, 2023). A learning from the project was the insight that no single actor has all the knowledge and perspectives needed to develop a high-quality movement environment; it must be done in close collaboration between landowners, landscape architects, planners, future users, and safety inspectors. This means partners with different functions coming together at every stage of the developmental process, as opposed to finishing their own part and then passing it along for the next colleagues to continue.

A dialogue tool meant to facilitate this process was developed in the project and a part of the tool can be found in Figure 32.1 (Change the Game, 2023). The tool emphasises the importance of initially reflecting on and defining a clear common image of *why* an environment should be developed or enriched, before the question of *what* specific solutions, affordances, or products should be provided. A clear and common vision for the development allows for purpose-maximising from different perspectives.

Purpose-maximising has, for example, been related to aspects of sustainability: both ecologically and economically through choice and re-use of functional materials, as well as new production processes and broader utility and benefit for multiple user groups in every place that is developed; and socially through a shared sense of ownership and attachment to places a person has contributed to developing, instilling an increased sense of pride and caretaking of the place. Ultimately, this process contributes to more local and circular use of competency and resources, all the while it honours and empowers specific local socio-cultural circumstances. Holistic human flourishing through movement is also highly compatible with the inner skills which are assumed to be critical prerequisites for navigating and incorporating the outer change defined in the UN Global Sustainability Goals (IDG, n.d.; United Nations, n.d.).



Figure 32.1 Scanning affordances matrix. Part of a dialogue tool developed 2021–2023 as part of the physical literacy in public environments project.

The tool is based on the PLEED principles and enriched with insights from environmental psychology, a trending concept in Sweden, specifically relating to re-thinking playground design by integrating play opportunities and nature-based elements to create "Play biotopes" (Mårtensson *et al*., 2022). Recent comparative studies illustrate enormous differences in play value, ecosystem services, costs to build and maintain, as well as carbon footprint, all favouring the nature-based play biotopes over the more traditional playground (Gillefalk and Gustafsson, 2024).

Another challenge to wide implementation of PLEED in Sweden is related specifically to the first principle, a level of challenge for all levels of ability, and barriers perceived by planners and landscape architects when limited by local playground policies to strict compliance with EU standards for playground equipment. The ethical dilemma of, on one hand providing interesting and meaningful opportunities for positive challenges for all, and on the other hand making all movement environments adequately safe, highlights the urgent need for methods that allow for a more neutral and balanced approach to risk management. This would ultimately reinforce land-owners' sense of confidence and security that the environments they are responsible for providing are both adequately safe and fit for purpose.

Australia

Applying PLEED principles to public infrastructure

Local Government is responsible for the delivery, maintenance, and renewal of the majority of public recreation facilities across Australia. Similar to other countries, Australia's strategic investment in public recreation and sporting infrastructure is often focused on a particular sport, activity

or population, rather than seeking a challenge for every interest for the whole community. Up to 95% of funding can be spent on the most popular participation sports in which only 15% of the population actively participate (Wyndham City Council, 2017).

In 2017, Wyndham City endorsed a one billion capital strategy underpinned by a vision that Wyndham will "Establish an integrated and sustainable sports facility network across the municipality which will benefit the physical, mental and social wellness of the whole community now and in 2045" (Wyndam Sports Strategy, 2017, p. 54). The Strategy is informed by 2441 voices including residents (n = 2004), sports clubs, and industry representatives who provided invaluable information about sport, active recreation and the way Wyndham develops its outlook to the future of sport in the community.

Six priorities represent the community's vision to achieve an active infrastructure network across the municipality:

- **Priority 1:** Capitalise on sport and active recreation improving individual and community health and well-being
- **Priority 2:** Connect families to the value of sport and recreation to instil a lifelong journey of sporting participation
- **Priority 3:** Enable local access, fundamental to the community's participation in sport and active recreation
- **Priority 4:** Provide diverse ways to participate in sport and active recreation through facilitating traditional, non-traditional, organised, and unorganised opportunities
- **Priority 5:** Embed multi-use into the network to create a culture of inclusive places that support the different ways the community wants to participate, which can evolve over time
- **Priority 6:** Uphold the importance of sustainable places which ensures current and future residents sport and active recreation opportunities are delivered

Wyndham City is one of the fastest growth populations in Australia (4.3%) and will double in size over the next 20 years to over 500,000 residents. Which means many of the spaces and places in which people will play and recreate are not yet built. Wyndham also has a population represented by 163 ethnicities and 99% of net migration will be from people moving from overseas (Wyndham Sports Strategy, 2017). The community was clear in its response that the development of competence and confidence in generationally adaptable spaces was important to active living. Through imbedding the principles of PLEED in the recreation and open space strategic framework, the shift of funding allocation has enabled a greater diversity of sports and activities throughout Wyndham within a 1 km radius of people's homes.

In addition, The Active Village Project (Noble, 2022) is working with Local Governments and Industry Partners including Asia-Pacific Society for Physical Activity – Physical Literacy Interest Group (ASPA-SIG) (ASPA, 2021) and ActiveXchange (ActiveXchange, 2025) to imbed data-led PLEED frameworks into key policy and planning.

Community-led innovation in Australia

Through the deliberate consideration of places, people, and programmes, a wide range of stakeholders can work together for the development of physical literacy-enriched communities.

One example is the Physical Literacy Scoping Project for Latrobe Valley for the Latrobe Health Assembly in Latrobe Valley, Victoria, Australia. This project sought to provide recommendations

for the Physical Literacy Working Group to build a shared understanding of physical literacy across the community, in their local context, through community-led innovation. Key learning from this project was that physical literacy-enriched environments are a foundation of community physical literacy.

All recommendations from this scoping project were adopted by the working group and incorporated into a charter and prioritised action plan. The recommendations included:

- Connect with Latrobe City Council Recreation Planning (and other departments) to understand and effectively engage with the council planning cycles
- Investigate possibilities to influence funding criteria for infrastructure to support physical literacy outcomes
- Trial physical literacy-based interventions and evaluate space use before and after

Implementation of these recommendations is well underway, through a collaborative action research project involving Federation University, the Latrobe Health Assembly, Latrobe City Council and the PLEED group. This project involves applying PLEED principles to upcoming recreation space projects and involving a wide range of stakeholders in improving physical literacy outcomes for the whole community. Design criteria and other tools developed from this project will help support and influence the design of parks and play spaces in the Australian context.

Conclusion

Physical literacy, as a multidimensional holistic construct, has many potential benefits to aid environmental design. This chapter has provided an introduction to some of the emergent principles and a practitioner's viewpoint of the application of these principles across various countries.

At the time of writing, the application of this philosophy is still very much in its infancy, but early evidence suggests that, as practitioners become more familiar with physical literacy as a concept and its enormous potential as a tool to aid environmental design, and connect this to all aspects of movement and physical activity delivery and participation, it will become a core approach. The outcomes reach much further than simply to increase and improve opportunities to be active. They touch all aspects of personal development and human flourishing. The environment should look after the people.

References

Abuhamdeh, S. and Csikszentmihalyi, M. (2012) 'Attentional involvement and intrinsic motivation', *Motivation and Emotion*, *36*(3), 257–267.

ActiveXchange. (2025). *Know and Grow Your Community | Data-Driven Insights*. https://activexchange.com/ (Accessed: 3 September 2025).

Agans, J. P., Stuckey, M. I., Cairney, J. and Kriellaars, D. (2024) 'Four domains for development for all (4D4D4All): A holistic, physical literacy framework', *Journal of Applied Sport Psychology*, 1–22. https://doi.org/10.1080/10413200.2024.2342323

ASPA (2021) *Physical Literacy Special Interest Group – Asia Pacific Society for Physical Activity*. [online] ASPA. https://aspactivity.org/about/special-interest-groups/physical-literacy-sig/ (Accessed 22 Aug. 2025).

Cairney, J., Dudley, D., Kwan, M., Bulten, R. and Kriellaars, D. (2019) 'Physical literacy, physical activity and health: Toward an evidence-informed conceptual Model', *Sports Med*, *49*(3), 371–383. https://doi.org/10.1007/s40279-019-01063-3

Change the Game. (2023, May 1). *Planning Tool for Environmental Movement Opportunities*. https://change-the-game.se/wp-content/uploads/2024/05/Planning-tool-based-on-PLEED_Change-the-game-2023.pdf (Accessed: 3 September 2025).

Gillefalk, L. and Gustafsson, M. (2024) *Kvarterslek, Temalekplats eller Lekotop?* https://urbio.se/wp-content/uploads/2024/05/Kvarterslek-Temalekplats-eller-Lekotop_Urbio_ver1.pdf (Accessed: 3 September 2025).

Houser, N. and Kriellaars, D. (2023) '"Where was this when I was in physical education?" Physical literacy enriched pedagogy in a quality physical education context', *Frontiers in Sports and Active Living*, *5*. https://doi.org/10.3389/FSPOR.2023.1185680

IDG. (n.d.) *Framework – Inner Development Goals*. https://innerdevelopmentgoals.org/ (Accessed: 2 July 2025).

IPLA. (2017) *IPLA Definition*. https://www.physical-literacy.org.uk/ (Accessed: 28 November 2023).

Jefferies, P. (2020) 'Physical literacy and resilience: The role of positive challenge', *Sciences & Bonheur*, *5*, 11–26. https://doi.org/10.17605/OSF.IO/SBZYW

Kootenay Adaptive Sport Association. (n.d.) *Kootenay Adaptive Sport Association – Barrier Free Adventure*. https://kootenayadaptive.wordpress.com/ (Accessed: 2 July 2025).

Mårtensson, F., Litsmark, A., Wiström, B., Sang, Å. O. and Hedblom, M. (2022) 'Play biotopes - where both children and nature thrive', *Movium Fakta*, 1–12. https://doi.org/10.5281/ZENODO.10604288

Noble, S. (2022) *The Active Village Project*. Routledge. https://doi.org/10.1080/00336297.2016.1268967

Phillips, B. (2024) *Happy, Healthy Places in New Developments: the Spaces in between*. London: Lands Improvement. https://www.lih.co.uk/wp-content/uploads/2024/02/1_White-paper-Happy-Healthy-Places-220224.pdf (Accessed: 3 July 2025).

Richard, V., Holder, D. and Cairney, J. (2021) 'Creativity in motion: Examining the creative potential system and enriched movement activities as a way to ignite it', *Frontiers in Psychology*, *12*, 690710. https://doi.org/10.3389/fpsyg.2021.690710

Sport England (2023) *Physical Literacy Consensus Statement for England*. https://www.sportengland.org/news-and-inspiration/physical-literacy-consensus-statement-england-published (Accessed: 28 July 2025).

Umeå Municipality (2025, July 2) *North Island - Umeå Municipality*. https://www.umea.se/byggaboochmiljo/stadsplaneringochbyggande/projekt/storreprojekt/norraon.4.4ff54ec174f999469c1509.html (Accessed: 3 September 2025).

United Nations (n.d.) *Sustainable development goals: 3 Good Health and Well-Being*. https://globalgoals.org/goals/3-good-health-and-well-being/ (Accessed: 2 July 2025).

Vinnova (2023, February 18) *Physical literacy in public environments*. https://www.vinnova.se/en/p/physical-literacy-in-public-environments/ (Accessed: 3 September 2025).

Woolley, A., Houser, N. and Kriellaars, D. (2024) 'Investigating the relationship between emotions and physical literacy in a quality physical education context', *Applied Physiology, Nutrition, and Metabolism*. https://doi.org/10.1139/APNM-2024-0082

World Health Organization (WHO) (2014) *Global Recommendations on Physical Activity for Health*. http://apps.who.int/iris/bitstream/handle/10665/44399/9789241599979_eng.pdf;jsessionid=F282F391BFFA514B1BDEE0656953F1A5?sequence=1 (Accessed: 3 September 2025).

Wyndam City Council (WCC) (2017). *Sports Strategy 2045 | Wyndham City*. https://www.wyndham.vic.gov.au/sports-strategy-2045 (Accessed: 3 September 2025).



Taylor & Francis
Taylor & Francis Group
http://taylorandfrancis.com