

Public Infrastructure Activation

(or why haven't we done this already?)

Draft Contribution to the WCG Human Settlement Framework

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Note: If you are pressed for time, review sections 2.3-2.4. It is a 8 minute read. This is draft. Please do not circulate on. Thank you.

1. Public Infrastructure Activation

1.1. Overview

By rethinking the nature and functioning of public school grounds, it foregrounds the potential of transversal thinking between departments. It focuses on the potential optimisation of underutilised public land within the control of the Western Cape Government (WCG). This refers especially, but not only, to school sites. **The shift offers a resource efficient way to address housing backlogs, make schools safer and more cost effective and free up resources currently tied up in unproductive emergency maintenance so that the quality of schools can be improved.**

This shift by implication enables real integration of the social fabric, introducing affordable housing into areas already served by public facilities and closer to economic opportunities. The shift also improves municipal financial viability by containing the extent of infrastructure networks that must be maintained.

The squeeze on provincial budgets should trigger a focus on where money is being spent unproductively. One example is where the custodian department (Dept of Public Works) paying rates on land that is not actively used by the schools that occupy it, often in locations ideal for social housing, complementary social services or income generating commercial development. Addressing the unproductive, fragmented spending of both capital and maintenance budgets on schools (or other land and social facilities) could allow cost savings to be redirected to improving the quality of existing infrastructure and services and ultimately improving educational outcomes, while releasing well located, free land for human settlements.

In this way the shift offers a real opportunity for the poor and un-housed (as well as employed people who are simply unable to afford high market related housing costs in the Western Cape) to access the “urban dividend” offered by well-located housing, close to social services and economic opportunities. **Achieving the shift relies on integrated thinking and truly coordinated investment across sectors and spheres of government, in partnership with non-governmental agencies and the private sector.**

2. Arresting the Downward Spiral

2.1. Current Practice

The inappropriate sprawling nature of peripheral development is driven by both public housing projects, private developments as well as the suburban spatial model of public facility provision. Peripheral housing developments create demand for new schools, public facilities, roads and services, putting pressure on already overburdened infrastructure maintenance funds of both local and provincial government.

The suburban nature and large site sizes for schools contribute to lateral sprawl and tie up large tracts of land that are typically underutilised. Provincial norms and standards set sizes for primary schools at 2.8ha and secondary schools at 3ha. Many schools in the Western Cape currently exceed these space norms, exacerbating management, operating and security problems. The norms include land for sports fields for every school site, regardless of whether there are funds to develop such facilities or sports teachers to run sports programmes.

School Governing Bodies (SGBs) in poor communities are reliant on the operational subsidy from Provincial Government for day-to-day maintenance and operations that are allocated per learner enrolled and typically inadequate to meet the needs of schools. All additional income is derived from fees (set by the school) and fundraising, both of which are limited within poorer communities.

There are very few examples of schools sharing facilities with each other or with other provincial or municipal facilities. This is fiscally inefficient and leads to duplication of facilities as well as human and financial resources (such as maintenance, security and facility management). While there are recent examples of new and better school design, typical school sites feature centrally placed, with 1-2 storey buildings with very low coverage (between 10 - 20%). School premises are generally hostile, featuring fenced perimeters with inactive edges and large areas of unmanaged land that is difficult to secure and exacerbates the extremely negative and unsafe environment.

At the same time, school occupancy levels in established areas ebb and flow with demographic changes over time dynamics. With reduced pupil numbers comes a reduced operational subsidies and fee income to maintain the school property. The mono-functional use of school sites constrains the potential of schools to weather these demographic dynamics.

Finally, the centralised but fragmented ownership, management, maintenance and operation of social facilities mitigates against efficient budgeting, maintenance and operations. The diagram below illustrates the existing roles and responsibilities of the departments involved with provincial schools.

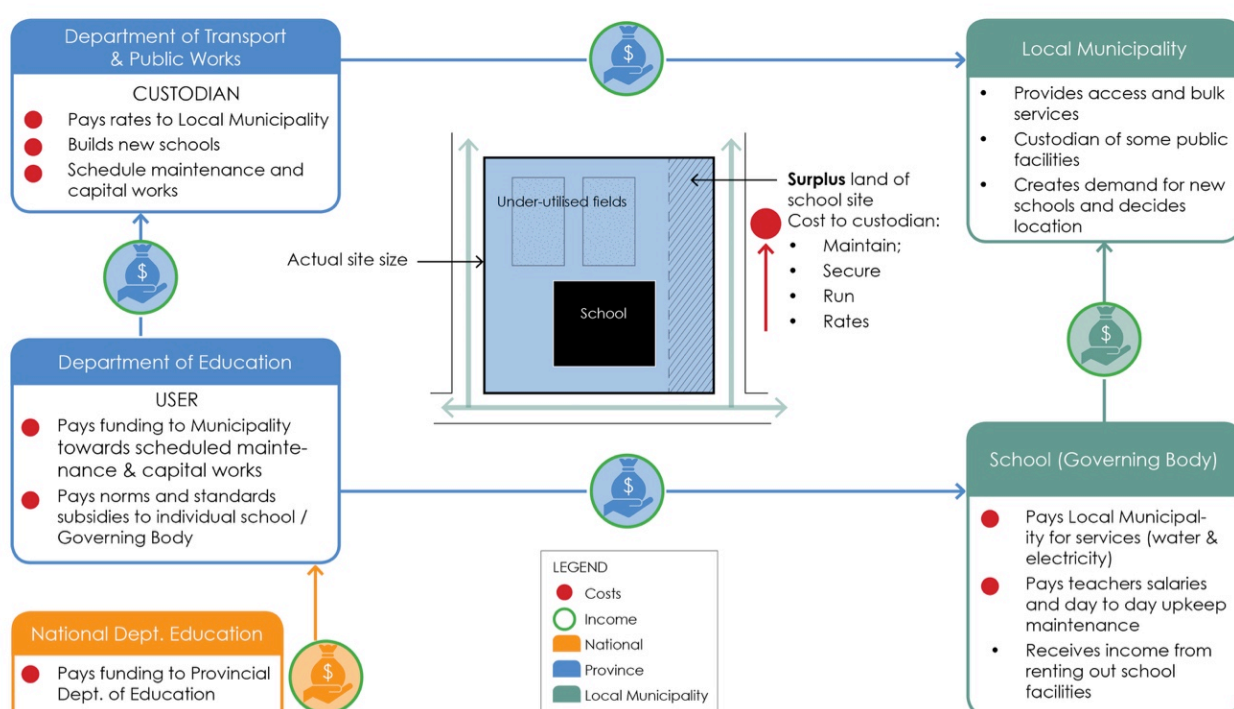


Figure 1: Current Situation

In terms of the Education Act (84 of 1996), School Governing Bodies (SGBs) have decision-making powers over land utilisation that they can exercise with the approval of the MEC for Education. However, despite the large amount of underutilised land associated with schools (and many other

public facilities) and the high costs of managing this land and associated buildings, SGBs are reluctant to release land for other uses. This is in part because the land holding costs for school land, such as rates and capital works (including extensions and major repairs and fencing), is carried by the Department of Public Works (the custodian), and not the Department of Education (user department) or School Governing Bodies (SGBs).

Despite SGB not owning or paying rates for school properties, their current decision-making powers over land utilisation have been cited as the reason for the failure of previous attempts to rationalise school sites. According to officials involved in these initiatives, SGBs are often reluctant to release underutilised land because they have future plans for it. So the Departments carrying the costs of land holding (the custodians) have no control over the use and management of this land and have no authority to use or dispose of this surplus land without the SGBs consent. As a result, their budgets are spread further and have less impact while maintenance; overcrowding and new school backlogs grow along with declining occupancy of schools in more established communities.

2.2. The Implications of Current Practices

A vicious downward spiral of consequences is playing out. The existing schools maintenance backlog is growing while the quality of many new schools is questionable. Changes in demographics across a large sprawling urban area results in school facilities being underutilised in established areas and new schools being built in others. School sites are not appropriately distributed with oversupply in some areas and an undersupply in others. As a result operating costs per pupil are disproportionately high, maintenance costs and backlogs are growing. The suburban nature of school sites exacerbates sprawl and fragments local neighbourhoods by limiting local accessibility and decrease the safety of local neighbourhoods.

There is a widespread lack of a sense of security among people attending school in the Western Cape. Our audit found that 16% of administrators and 16% of learners feel unsafe at school. In other words, 1 out of 6 people at schools in the Western Cape feel unsafe. This is worse for urban learners, secondary school learners, and learners at poorer schools. Half of urban secondary school learners at a quintile 1 school feel unsafe. This is twice the share of rural secondary school learners.

- Equal Education Survey, 2016

The schools asset maintenance database indicates that 25% of the WCG's DoE annual maintenance budget for emergency maintenance goes to repairing damage caused by vandalism. In 2016/17 there was no allocated budget for fencing due to limited funds. So it can be expected that the emergency maintenance budget used to repair vandalism will increase. As a consequence decreasing funding available for improving and enlarging over utilised schools, improving the quality of teaching facilities, providing proper sanitation, and computers and so on.

Precious land within the existing urban footprint lies underutilised, instead of providing a solution to the on-going housing problem. Because there are no financial repercussions, or time constraints for underutilising school property, there is no incentive for SGBs to release land for other uses and income generating developments. So the pressure to deliver housing expediently at scale diverts housing projects to peripheral sites that in turn generate a demand for new schools.

And so the downward spiral accelerates; increasing maintenance backlogs, further marginalising the poor and placing municipal and provincial financial viability, environmental sustainability and food security in peril. It is evident that public funding is not being used optimally to improve education outcomes or establish integrated human settlements.

While these implications are experienced within the silos of government departments, the causal chain suggests far reaching and frightening consequences if the status quo remains unchanged:

- Continued socio-economic fragmentation;
- Unaffordable schools maintenance and rising costs (maintenance, rates and so on);
- Inefficient use of many school sites both with respect to land optimisation and under-occupation;
- Increasing funding deficits and less revenue to spend on school facilities;
- Declining quality of educational outcomes;
- Increasing skills crisis;
- Negative impact on economy and social stability.

2.3. An opportunity to shift the trend

The shift requires the rationalisation of the provincial land asset portfolio. The large, inefficient and underutilised land holdings occupied by institutional facilities such as schools and hospitals need to release surplus land for other uses, primarily housing.

Ideally the surplus land identified should be ceded to the municipality responsible for housing delivery and infrastructure maintenance which will reduce the rates burden on the DTPW and empower the municipality to plan and implement projects (including housing) on these land parcels. This could provide a large portfolio of well-located, serviced, free land for human settlement provision in a short space of time.

By way of illustration, a high-level exercise demonstrates the potential capacity of Province owned schools within the functional region to meet the housing backlog. **Almost 16% of the “housing backlog” (an inflated figure of 334 000 deemed inadequately housed) within the Greater Cape Metro could be met by wrapping 2 sides of the perimeter of existing school sites with housing** (a mix of single, double and 4 stories). A notional illustration of this concept is provided in Figure 2.

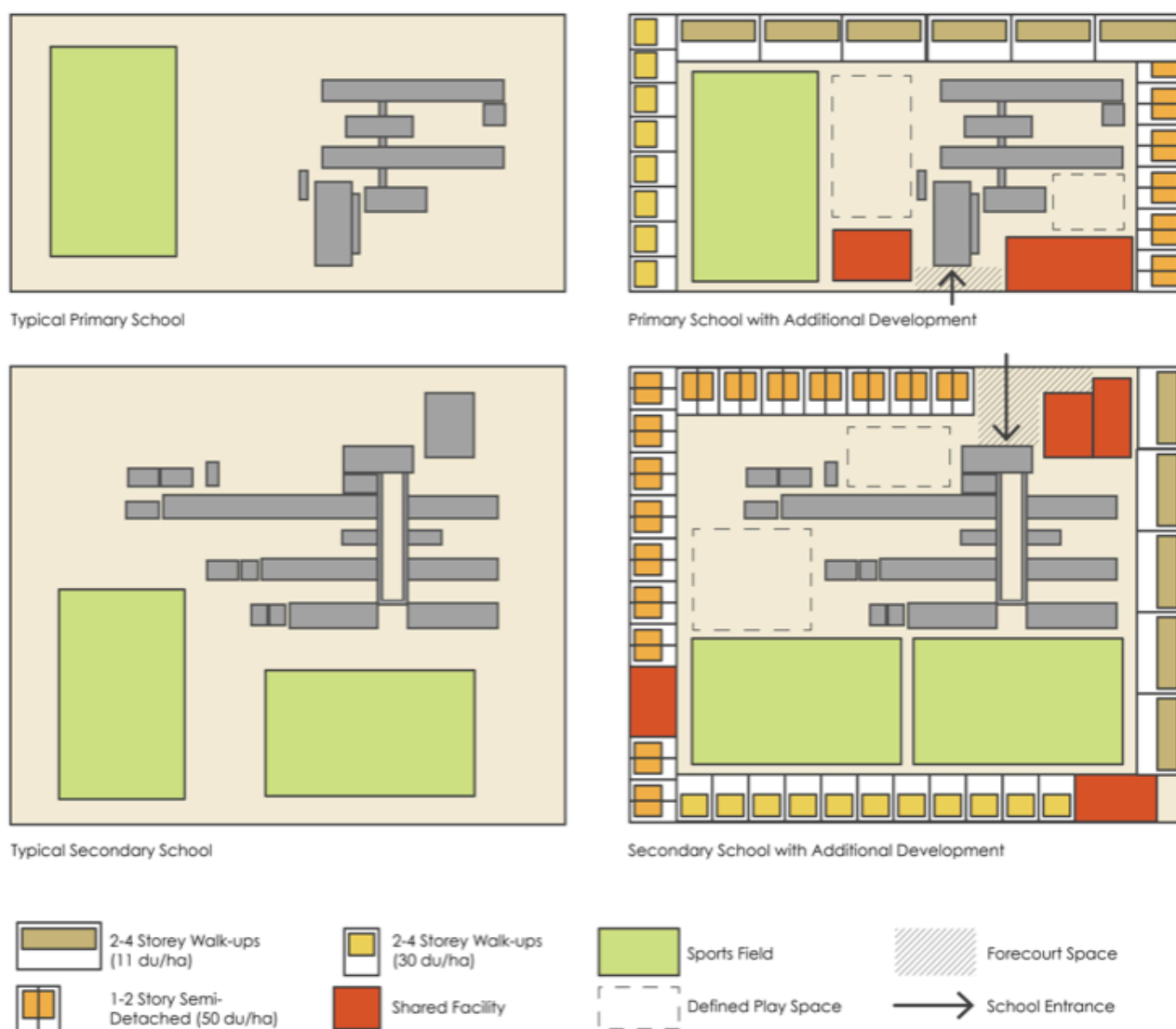


Figure 2: Illustration of a typical infill opportunity on a school site

The potential of this shift could be amplified by spatial clustering and the sharing of public amenities between schools, other social services and municipal facilities (playing fields, libraries, halls and so on). Rationalising the land acquisition, security, maintenance and letting of public facilities can achieve significant savings in government spending. This in turn can be directed to developing such social clusters into high quality, safe havens of learning, social engagement, sport culture and service delivery.

Two notable complementary processes have been initiated within the WCG that could be aligned with this shift. These are the Department of Cultural Affairs and Sport (WCG)'s **Mass participation, Opportunity and access; Development and growth (MOD) Programme** and the Department of Transport and Public Works' study to understand the opportunities and limitations to sharing and clustering underutilised public facilities.¹

¹ Since 2010 the Department of Cultural Affairs and Sport (WCG) rolled out 181 MOD programme centres across the province. The Mass participation, Opportunity and access; Development and growth (MOD) Programme is central to the vision of the Department to create a socially inclusive, creative and active Western Cape. MOD's bring together different governmental departments and stakeholders to provide centres for sport, recreation arts and culture.

2.4. What are the projected benefits of a virtuous cycle?

If underutilised suburban format WCG school sites are rationalised and undeveloped school sites made available for housing (rather than put out to the market), this could meet a significant portion of the current housing backlog.

While the deflection to large, peripheral unencumbered sites occurs in order to facilitate rapid delivery at scale, the reality is that these large sites typically take more than 3 years to plan, package and implement (longer if EIAs are involved). The long planning processes, land costs and extensive new infrastructure costs also absorb at least 30% of the subsidy, leaving only R100 000 for the top-structure. If these costs were eliminated, better quality housing products would be possible.

This in turn would improve socio-economic integration, reduce operating deficits (including the cost of rates) for the WCG Education and Works as well as the relevant municipality and increase revenues that can be channelled back into improved education facilities and outcomes.

If this model is applied to 80%² of the WCG school properties within the Greater Cape Metro, approximately 50 000 residential opportunities could be provided, all with only very limited additional local infrastructure required. This exceeds what the municipalities within the GCM can deliver over 5 years without adding to the infrastructure maintenance backlogs and operating costs.

At the same time, these housing units create a secure perimeter to the school at no capital or operating cost to the DPW of DoE and eliminate the need for on-going fence maintenance into the future.

This simple exercise demonstrates the potential of alternative approaches housing delivery that can also assist in making school operations and maintenance more sustainable, offer opportunities to deliver many housing opportunities across the province and grow the construction industry at local levels, improving local economic development.

One of the arguments against this approach has been that large contractors avoid the risks and costs of fragmented, small scale sites and that large contractors, on large sites offer economies of scale that ensure rapid delivery and lower costs per unit. Both of these views can be challenged by the facts that these large projects typically take over three years to implement or even longer on sites requiring EIAs and that up to 30% of the subsidy goes to planning processes and infrastructure costs.

Centres are located in a community schools and serves the community as a whole through activities taking place after school hours. The Department of Transport and Public Works is initiating a study to understand the opportunities and limitations to sharing and clustering underutilised public facilities. These facilities can be made available to communities to ensure optimal use and provide a sense of communal ownership and promote social cohesion. The goal is to carry out the Western Cape's motto "Better Together" by coordinating a formal agreement process that guides collaboration between different partnerships and government institutions as well as facilitating sharing of resources and increasing capacity and funding. The study will focus on the clustering of social infrastructure as it pertains to the DTPW's mandate but also include libraries and sporting facilities. The outcomes of the research will determine whether it is necessary to take any further action, such as a policy position or implementation framework.

² Not all schools have surplus land as more recent trends have seen a reduction in school site sizes and in other cases land is already used for other purposes. However there are also a significant number of school sites that have been set aside but never developed. The entire extent of these sites could be made available.

In addition current delivery completely exclude small contractors, constraining the growth of this significant economic sector in the Western Cape and limiting opportunities for local economic development. In the short and long term, the apparent benefits of large-scale delivery are not being realised.

While it is true that a small-scale contractor model would require more intensive project management, the systems for this are already in place. The WCG DTPW is running a powerful asset management system for the capital works on school buildings. The individual projects are carried out by local small contractors but within a well-managed project management framework. The system has been used internationally to manage projects of all scales and could easily be adapted to assist with the coordination of small-scale housing projects.

Figure 3 illustrates the institutional and public finance benefits of the shift while the itemised benefits to the various stakeholders are elaborated below.

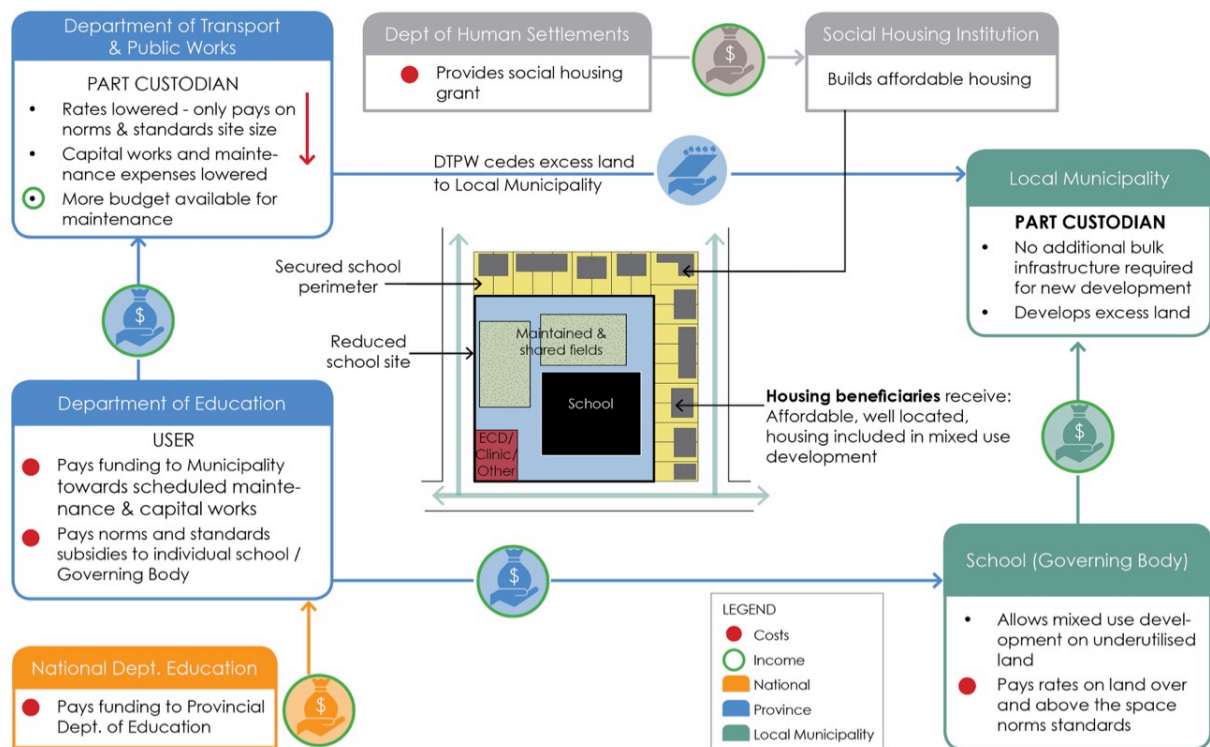


Figure 3: Proposed: The Potential Benefits of the Shift

2.4.1. WCG Department Public Works (Custodian)

- Rationalised property portfolio optimised to match needs of user department (education);
- Reduced cost of maintenance;
- Reduced operating costs by reducing rates burden;
- Savings that can be directed to improving the quality and facilities of schools and improve educational outcomes.

2.4.2. For Municipalities:

- Access to free well located land for housing;
- Accommodating housing backlogs without the burden of increased infrastructure provision, operation and maintenance;

- Better socio-economic integration;
- Improved accessibility and reduced demand for travel from dormitory townships to jobs and services and therefore more viable public transport.

2.4.3. Department of Education (User Department)

- Improved utilisation levels in schools in established areas where demographic shifts have reduced occupancy below optimal levels;
- Reduced operating costs (security, maintenance);
- Potential revenue where surplus land is used to generate income (commercial uses, facility hire and so on);
- Redirect “lost maintenance monies” to improve the quality of schools, improve premises, fund better equipment, pay teacher salaries etc.

2.4.4. School Governing Bodies:

- Safer schools;
- Affordable accommodation for teachers (lower absenteeism);
- Revenue stream if land used for commercial development;
- Access to more funding for equipment, and improved facilities (resulting in capital and operating savings by DoE / DPW).

2.4.5. Department of Human Settlement and Social Housing Institutions:

- Access to free, well located land that can make social housing projects viable in well located areas;
- Real opportunities to deliver Integrated Human Settlements.

2.4.6. Department of Social Development

- Reduced risks to learners in accessing school (improved child safety);
- Increased safety at schools, reducing opportunities for drug-dealers to access school perimeters;
- Crime prevention through urban upgrading.

2.4.7. Housing Beneficiaries and Communities:

- Safer schools and neighbourhoods;
- Access to better located housing opportunities, close to existing amenities, reducing travel time and the social costs of long commutes;
- Better quality schools with better resources and improved educational outcomes.

2.4.8. Local Economic Development:

- Safer schools and neighbourhoods;
- Access to better located housing opportunities, close to existing amenities, reducing travel time and the social costs of long commutes;
- Better quality schools with better resources and improved educational outcomes.

3. Key actors involved in this shift and institutional arrangements:

The following lead actors and departments are key to enabling the shift:

- MEC of Education, Department of Transport and Public Works and the Department of Human Settlements need to agree on the principle as well as the legislative amendments required to support this shift;
- National Department of Education needs to action the legislative amendment
- School Governing Bodies need to see the benefits of this approach and participate in the rationalisation process;
- Department of Social Affairs and Sport needs to integrate their MODs programme
- Transversal WCG committees that deal with integrated planning, budgeting and implementation within the WCG should drive this;
- A pilot district or local municipality, able and willing to pilot the principles of this shift to test and demonstrate its benefits;
- Regionally based institutions or agencies to coordinate the delivery of housing and beneficiary allocation across the many small-scale projects and possibly even bulk purchases of construction materials to enable small contractors to price competitively.

4. Phased actions to realize the shift:

At the highest level this shift demands a willingness within all spheres and line functions of government to let go of departmental or managerial turf and assign ownership, funding and revenues to improve the performance of settlements. The actions required over a 10-15 year period are described below.

0 - 5 Years

1. Pilot Project

- Engage the departments of Public Works and Education and the Local Municipalities to investigate and pilot the concept using of wrapping school sites with affordable housing;
- Nominate a Local / District Municipality that is willing to roll out a pilot project to demonstrate and test the shift;
- Capacitate the municipality (or another agency) to project manage the implementation of housing projects by many small contractors;
- Set up an agency to manage bulk materials purchases and distribution to small contractors;
- Confirm and cede excess land on underutilised school sites in accordance with the Municipal Structures Act. 117 of 1998;
- Grant legislative exemption (Act No. 84 of 1996) with respect to the authority required to release surplus school land for other purposes such as housing and social facilities;
- Dedicate Municipal resources to coordinate the implementation of the pilot. This should include alignment with the Municipal project pipeline and engagement with School Governing Bodies (SGBs);
- Demonstrate the revenue potential of reusing excess land to School Governing Bodies, Local Municipality, DTPW and Department of Human Settlements to enable the utilisation of this land for housing development opportunities.

2. Legislative Review

- Amend the schools Act No. 84 of 1996 in relation to the decision making structures relating to the use of school property and the decisions that occur around the usage of individual school land;
- Finalise and approve the review of provincial schools norms and standards;
- Recommend review of national schools norms and standards;
- Carry out blanket rezoning on school sites to enable the development of housing on school sites.

3. Resourcing

- Update and revise housing subsidies to make 2-4 storey residential walk-ups feasible – the cost savings on planning and infrastructure will already release at least 30% of the current subsidy allocation;
- Secure and resource project management capacity and to make 2 - 4 storey residential walk-ups feasible across many sites simultaneously (refer to the cutting edge schools asset management systems already in place and being implemented by DTPW to carry out schools maintenance projects);
- Allocate a significant portion of 5 year HS budget to the pilot project;
- Support SGBs to manage land appropriately and rationalise underutilised land;
- Build capacity to deliver affordable housing including agencies to project manage multiple small contracts and set up bulk materials suppliers for small contractors;
- Investigate the mechanisms and conditions for passing on the rates costs of land in excess of the norms to SGBs as an incentive to relinquishing land they cannot use or manage.

5 - 10 years:

- Review pilot project outcomes/challenges and recommend improvements;
- Expand the pilot province wide and institutionally formalise the concept of “school and facility precincts”;
- Revise national school norms and standards, budgeting protocols and allocation criteria to support integrated planning, budgeting, implementation and management of “social and education precincts”.

10-15 years:

- Formalise social facility clustering (school and facility precincts) as the new norm and an essential component of land acquisition and school norms and standards:
 - Finalise and implement the social facility cluster protocol, including the policy, institutional, legislative and budgeting amendments necessary to achieve this;
 - Incorporate other social facilities onto school sites; and
 - Facilitate build partnerships with communities (especially the new residents of housing on the perimeter of these sites), NGOs and other agencies for joint management and operations of these facilities.
- Decentralise the planning, operation and management of social and education precincts to the local level.

5. Precedent and Best Practice

The following international, local precedent and best practice examples illustrate the potential to rationalise and improve the performance of school sites. These include:

- Using excess land on existing school sites for housing;
- Improving security for schools by wrapping perimeters with private development or public facilities;
- Enabling clustering of facilities;
- Creating compact, utilised and mixed-use and shared facilities;
- Improving utilisation of land and encouraging coverage of above 30%.

Thuba Makote Programme: Schools as Centre for Community Development. The Tuba Mokote Programme was initiated in 2002 by the Department of Education and managed by the CSIR. During this programme 9 pilot project schools were constructed or renovated to introduce new approaches to school building design, construction and operation in order to address the needs of both high quality education and community development in South Africa. The project focussed on providing comfortable, spatially efficient, flexible, multi-use and sustainable facilities. Focus was given to sharing the school facility with the neighbouring communities, creating centres for community development. This included the introduction of business units, schools gardens, after hour activities, shared spaces/facilities such as IT centre, libraries and halls as well as a more efficient uses of schools sites. Wrapping school sites with housing was a tool used to sustainably and positively secure school property.



Figure 4: Masibambane Secondary and Bloekoms Primary School, Kraaifontein



Figure 5: Walledecene Primary and Secondary Schools, Kraaifontein East



Figure 6: Riebeek Primary School, Belhar,— Residential wrapped perimeter and shared Hall

The compact site of **Castelldefels Primary School, Barcelona** is only 0.7ha with 42% coverage. It is sandwiched in between high density residential and a railway line. The 1 – 3 storey building accommodates classrooms on the upper floors with common spaces on the ground floor allowing transparency on both sides to give an impression of space and openness. The small site accommodates two sports courts and additional play areas. The school building defines the street edge with residential wrapped around the remaining perimeter.



Figure 7: Castelldefels Primary School

Saint Marti's Primary School, located in the urban neighbourhood of Poblenou, Barcelona forms part of a multi-facility municipal building. The facility includes an adult education centre; two underground public car parks, a pre-primary and primary school. The area of the 1 – 3 storey school site is 0.35ha with 100% coverage. To accommodate the space requirements, rigid planning rules, compact site and unchangeable position of the underground car-park, the school was designed with the bulk of the education facilities located on the ground floor and all the roofs became the school's playgrounds.

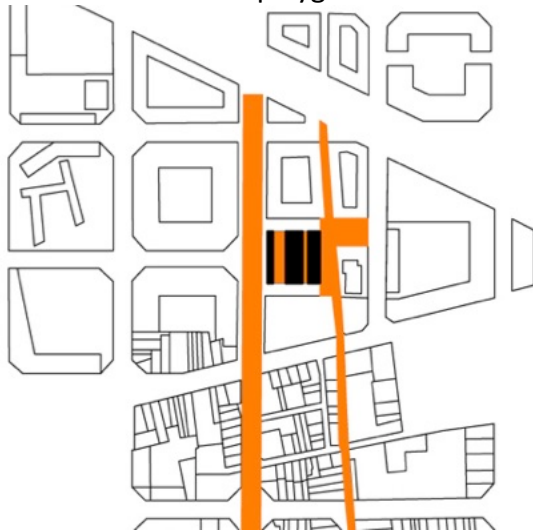


Figure 8: Saint Marti's Primary School, Barcelona, Spain

The compact site of **Pimlico Academy in London** includes a U-shaped building around a protected courtyard. The site accommodates the high school's academic program; sports facilities (5 courts and 1 field) as well as a public shared library, adult education centre and activity hall. The height of the building (1-3 storeys) helps to accommodate all the different uses on the 170m x 95m, 1.6ha site (a similar size to the surrounding city blocks). The coverage of the site is 34%.



Figure 9: Pimlico Academy, London



Masibambane Secondary School located in Kraaifontein was one of the 9 pilot schools developed in the Thuba Makote Programme. Opposite it is the compact Bloekoms Primary (1.2ha below the norm). Also in Kraaifontein, Wallecedene Primary and Secondary schools have perimeters wrapped by private residential and follow a courtyard typology with sites mostly below the space norm, including sports courts and fields.

Usasazo Secondary School in Khayelitsha is located along the street edge with the building creating a series of internal courtyards. The school functions are split by a central 'street' with classrooms on the one side and more public facilities such as the school hall and admin block on the other. This configuration allows the school to open up the hall for community use, while keeping the academic side of the school private and secure.



Figure 10: Usasazo Secondary School

Library Parks, Medellin, Columbia. The establishment of world class social facility hubs with 24 hour access to high speed internet, security services and meeting spaces located at accessible places in the favelas of Medellin, Columbia has had a direct impact on schooling outcomes and decreased crime in the poorest communities within this city.



Figure 11: Medellin Public Library Park