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INFRASTRUCTURE AND WORKPLACE 2.0, A WICKED PROBLEM SET

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Exercise Solo Flight

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INFRASTRUCTURE AND WORKPLACE 2.0, A WICKED PROBLEM SET

Space Management may be the most ignored – and most powerful – tool for inducing cultural change, speeding up innovative projects, and enhancing the learning process in far-flung organizations. Tom Peeters, 1992.¹

Infrastructure. Long recognized by organizational experts for its impact on employees and institutional outputs, but the Department of National Defense (DND) has long marginalized its portfolio with chronic under-investment in an exclusive focus on operational outputs. This has resulted in the unintended second order effect of fracturing the workplace linkage to culture, truncating optimization of employee outputs. With over 50% of DND's infrastructure portfolio over 50 years old and in poor overall condition,² the drive for innovation, dynamic thinking, and retention as an aspirational employer of choice are undermined by outdated, obsolete, drab facilities that do little to inspire collaboration and energetic dynamism. The Canadian Armed Forces (CAF) recognizes the importance of evolution, of transforming into a relevant, respected, and leading organization.

This paper will establish the applicability of various policies under the responsibility of diverse organizations and how infrastructure cannot be fully optimized due to bureaucratic barriers and siloed authorities. This paper is structured by a brief historical review of infrastructure in DND, delineating the problem space, situating the current construct of Centralization under the Assistant Deputy Minister (Infrastructure and Environment). DND's flagship infrastructure project of Carling Campus will be analyzed using the Walter-Gibson

¹ Meister, Jeanne and Kevin Mulcahy. *The Future Workplace Experience*. (McGraw-Hill Education, New York), 2017, p 29.

² Canada, Office of the Auditor General, 2012 Fall Report, Chapter 5. 2012.

model for how successfully it has created the workplace of the future. This will include an exploration of the science of interplay of physical infrastructure on the individual as well as how compartmentalization of policy responsibilities limits transformative efforts. Ultimately, this paper will demonstrate that while DND's implementation of Workplace 2.0 is an improvement for workplace quality and collaboration, disparate responsibilities and authorities attenuate its implementation and preclude fully optimizing workplace transformation.

The modern era Department of National Defence began with the 1867 Militia Act and adopted its modern structure with Unification in 1968.³ Most of the CAF's infrastructure pre-dates Unification, such as Manitoba where half of the infrastructure portfolio originates from the early 1900s,⁴ there have been significant recent changes in infrastructure governance. Up until the 1970's, infrastructure followed a centralized model with responsibility for governance and management resting at the national level.⁵ With increasing complaints from the service commanders that their operational needs were not being met, infrastructure custodianship was assigned to the respective service commanders (L1s, which expanded to include smaller L1s such as Chief of Military Personnel, Canadian Forces Housing Agency, Canadian Forces Intelligence Command to name a few).

However, the operational L1 commanders often held their positions for 3 years (or less) and were evaluated on their 'operational effectiveness', their ability to conduct operations. This incentivized the abdication of infrastructure resourcing in favour of operational activities. In the case of the Royal Canadian Air Force, the commander would be faced with either reducing the amount of fuel purchased, thus reducing flying hours (the ultimate metric of air force operational

³ Canada War Museum Website, *Canada Within the Empire*. Accessed 21 May 2018.

⁴ 17 Wing Winnipeg Master Real Estate Development Plan, 2011.

⁵ Speech by Assistant Deputy Minister (Infrastructure and Environment) on Centralization, 17 Wing Winnipeg, 14 October 2014.

effectiveness) or reducing the maintenance and repair of infrastructure. While not an issue throughout the 1980's when resources were relatively robust, as General Rick Hillier coined the 'Decade of Darkness', the 1990's saw drastic cuts where infrastructure took a heavy brunt of the cuts.⁶ For instance, all Preventative Maintenance cells were eliminated, while saving money in the short term, it would cost substantially more in the 15-20-year time horizon if not re-instituted.⁷

Those cells were never reconstituted with the effect akin to never changing the oil in one's car to save money and waiting until the engine seizes to conduct breakdown, or emergency, maintenance. One such example would be the bearings on a ventilation fan, a \$200 part. Lack of regular inspections meant it failed instead of being proactively replaced, costing \$20,000.⁸ Successive commanders continued to focus on operational results given the risk assessment: immediate threat to operational effectiveness as opposed to a potential failure of infrastructure at some undefined point well into the future.

The situation became critical as in the mid-2000's the CAF was focused on the war in Afghanistan with infrastructure continuing to degrade. The 2008 Canada First Defense Strategy sought to address the under-investment in infrastructure by committing 8% of DND's budget to infrastructure and would:

...move from spending an average of 2.5 percent of realty replacement costs (RRC) annually from 2000 to 2006, to an average level of just under 4 percent annually over the next 20 years. Sufficient resources will also be set aside for the future acquisitions required under this Strategy to build or upgrade associated infrastructure. Overall, the

⁶ Galloway, Gloria. *Hillier Decries Military's "Decade of Darkness"*. The Globe and Mail Online. Accessed 21 May 2018.

⁷ Canada, Department of National Defence, *Audit of Municipal Works*, Assistant Deputy Minister (Review Services), May 2016, p 16.

⁸ 17 Wing Winnipeg, incident occurred August 2014, reported by Wing Construction Engineering to Wing Commander at weekly update brief.

Strategy aims to replace 25 percent of existing infrastructure over 10 years and 50 percent over the next 20 years.⁹

The apex of investment only approached half (2% of RRC) and subsequently the Office of the Auditor General (OAG) published audits that highlighted the infrastructure risks.¹⁰ The Assistant Deputy Minister (Infrastructure and Environment) (ADM(IE)) was called to answer to the Deputy Minister for the state of infrastructure however, they could not direct resourcing and held no ability to influence the outcomes other than the annual publishing of the Functional Planning Guidance to the L1 commanders.¹¹ They lacked the authorities to hold L1 Commanders accountable for adhering to the guidance, which clearly resulted in a degradation of the infrastructure portfolio.

This coincided with the 2012 budget announcement that would Centralize real property in DND under one custodian, the ADM(IE) to “achieve better value for money”.¹² In spring 2016, Final Operating Capacity (FOC) was declared and ADM(IE) assumed full responsibility, for real property authorities and full budgetary delegations, and became the sole custodian of the department’s infrastructure portfolio, but *only* for infrastructure and only with whatever infrastructure resources L1 commanders identified and transferred in the Inter-Component Capability Transfer.¹³

⁹ Canada, Department of National Defence, Canada First Defense Strategy, 2008, p 19.

¹⁰ Canada, Office of the Auditor General, 2012 Fall Report, Chapter 5. 2012. Sects 5.65 – 5.69.

¹¹ Canada, Department of National Defence, Audit of Departmental Budget Management, Chief of Review Services, 2012, p 15.

¹² Canada, Ministry of Finance, Jobs, Growth and Long-Term Prosperity: Economic Action Plan 2012. 2012, p 274.

¹³ Chartrand, Joel. “Improving Real Property Portfolio Planning and Governance at the Department of National Defence”. McGill School of Urban Planning. Montreal, PQ. 2016, p 8.

Not only did ADM(IE) receive less than half the resources commensurate with maintaining DND's portfolio, but their domain is exclusively infrastructure: bricks and mortar, tradespeople, urban planners and the like. However, the Assistant Deputy Minister (Human Resources – Civilian) (ADM(HR-Civ)) manages approximately 24,000 civilian employees while Chief of Military Personnel develops policy for the approximately 68,000 regular force members, plus an additional 27,000 reservists.¹⁴ Civilians must adhere to the terms and conditions of their respective Collective Bargaining Agreements, Treasury Board policies, and National Joint Council policies.

These stipulate not only rigid parameters for hourly wages with specific terms for breaks, and time spent conducting union matters,¹⁵ but also govern infrastructure specifics such as acceptable office temperatures.¹⁶ Military fall under the National Defense Act and Code of Service Discipline with unlimited liability, mission focused with no means of getting overtime or paid breaks.¹⁷ There is great potential to implement Alternate Work Arrangements (AWA) whereby some of the workforce works from home. There are numerous benefits to both employer and employee in such an arrangement, where employees enjoy better health, better quality of life and employers enjoy improved productivity, lower real property costs, and reduced absenteeism.^{18 19} However, how can ADM(IE) create a collaborative work environment predicated upon only a certain percentile of the workforce being present on any given day when they cannot influence the terms and conditions of employment?

¹⁴ Canadian Armed Forces Website, Frequently Asked Questions. Accessed 21 May 2018.

¹⁵ Canada, Treasury Board of Canada Secretariat, Agreement Between the Treasury Board and the Public Service Alliance of Canada. Expires 4 August 2018. Articles 14 and 25.

¹⁶ Canada, National Joint Council, Occupational Health and Safety Directive, 2011. Sect 2.2 (Environmental Conditions).

¹⁷ Canadian Armed Forces Website, Pay Overview. Accessed 21 May 2018.

¹⁸ Canada, Employment and Social Development Canada, Flexible Work Arrangements: A Discussion Paper. May, 2016, p 9.

¹⁹ Meister and Mulcahy... p 12.

This brings us to the workplace of tomorrow, Treasury Board's endorsement of Public Services and Procurement Canada's Workplace 2.0. This is the federal government's effort of consolidating office space to the smallest possible footprint to achieve real property cost savings while simultaneously creating a desirable workspace to meet every individual's workplace preference and fostering collaboration. A comprehensive set of workplace dimensions, ancillary quiet rooms and conference rooms, collaboration spaces, as well as rules governing restrictions on space personalization, specifically anything that might block lines of sight.²⁰ The benefits of natural light have been well established as positively contributing to environmental conditions, increasing employee health and productivity.^{21 22 23}

Walt and Gilson's policy analysis framework serves as an excellent tool to analyze the complexities of infrastructure policy development. Using the Content, Context and Process while identifying Actors will further expose the gaps in policy unification and actors who remain disparate and poorly integrated.²⁴ By delving into the various components of infrastructure policy consideration through the prism of the Walt Gilson model, it will lay out the threads binding people to infrastructure and how ADM(IE) has yet to tie them all together in no small part due to their limited authorities.

The context of infrastructure has been clearly established: decades of under-investment with custodians fixated on operations at the expense of infrastructure investment. Independent

²⁰ Treasury Board of Canada Secretariat, Workplace 2.0 Fit Up Standards. Accessed 21 May 2018.

²¹ Charles, K. E., Veitch, J. A. "Environmental Satisfaction in Open-Plan Environments: 2. Effects of Workstation Size, Partition Height and Windows". National Research Council Canada, Institute for Research in Construction. Ottawa, ON. 2002.

²² Edwards, L. and P. Torcellini. "A Literature Review of the Effects of Natural Light on Building Occupants" National Renewable Energy Laboratory U.S. Department of Energy, Colorado, USA. 2002.

²³ Roelofsen, Paul. "The Impact of Office Environments on Employee Performance: The Design of the Workplace as a Strategy for Productivity Enhancement" Journal of Facilities Management, Vol. 1 Issue: 3. 2002. Amersfoort, The Netherlands.

²⁴ Walt, Gill, and Lucy Gilson. "Reforming the health sector in developing countries: the central role of policy analysis." Health Policy and Planning 9, no. 4, 1994, p 360.

reviews highlighted the failing state, with government spurred into action and centralized real property delivery.²⁵ Though, Centralization was limited to custodianship, and did not involve any aspect of policy-making affecting the terms and conditions of employees in the workspace.²⁶ This leads to Content, whereby Workplace 2.0 is attempting to transform how employees interact with their workplace as well as each other. Centralization enables ADM(IE) to assign space, maintain facilities, build or demolish buildings, acquire or dispose of land, but does not confer authority to enable AWA, sharing cubicles predicated on the assumption that some employees would be in the office only half the time, so one cubicle could serve two employees, or have transient employees who only report on an as-needed basis.

Thus, it becomes increasingly evident that there are diverse Actors spanning various organizations, each with independent responsibilities and authorities. ADM(IE) is both the functional planning authority for DND for real property, as well as the implementor for Workplace 2.0. However, PSPC remains the functional planning authority for Workplace 2.0 (accountable to Treasury Board as the approving authority) itself and has based the specifications on a generic office construct for all the federal government. Some key underlying assumptions include: relatively static workforce size: infrastructure inherently has finite space that is not readily expandable to adjust to large changes in workforce. For instance, DND sized Carling Campus for a National Capital Region footprint of 21,000 employees²⁷ (was developed in the middle of the previous government's Deficit Action Reduction Plan that sought to reduce the number of civilian workers), but currently DND has 24,000 employees in the NCR with Strong,

²⁵ Canada, Office of the Auditor General, 2012 Fall Report, Chapter 5. 2012.

²⁶ Canada, Department of National Defence, Master Implementing Directive – Real Property Management Centralization Full Operational Capacity. Canadian Armed Forces Real Property Operations Group. 2015.

²⁷ Canada, Department of National Defence, The Department of National Defence National Capital Area Master Real Property Development Plan and Accommodation Strategy 2015: Post Carling Campus. 2015.

Secure, Engaged government policy authorizing an increase to 26,000 NCR employees, with a delta of 5,000 work stations.²⁸

Another assumption is that all government work is done in the unclassified realm, true for most government departments but not DND. As a result, the low cubicle walls designed to allow maximum natural light, a logical consideration for an ideal workplace, fails to provide sufficient privacy to process sensitive and secret information and not all people in the open workplace will have secret security clearance. Furthermore, this does not address the concept of need-to-know, whereby even if individuals have the appropriate security clearance or the information is unclassified, DND seeks to limit the overall disclosure of information to prevent an aggregate collection of information revealing sensitive or classified capabilities, and can result in higher employee stress.²⁹ Notwithstanding, Carling Campus at the West end of Ottawa has been developed to be DND's flagship facility, an entire campus dedicated to the effective implementation of Workplace 2.0.

PSPC has thus far been extremely reticent to acknowledge the unique privacy requirements of DND when implementing Workplace 2.0 at Carling Campus.³⁰ While this is hardly surprising, as Workplace 2.0 has Treasury Board consent and there is no DND-unique alternative, with any mitigation measures not only costly, but violate the principles of Workplace 2.0 that are intended to make it an efficient and effective workplace. In addition, DND has now taken to repurposing all the ancillary rooms needed to realize the concept of Workplace 2.0 into

²⁸ Chief of Staff, Real Property Operations Group National Capital Region, briefing to ADM(IE) April, 2018.

²⁹ O'Neill, M. J., Carayon, P. "The Relationship Between Privacy, Control and Stress Responses in Office Workers" Paper Presented at the Proceedings of the Human Factors and Ergonomics Society 37th Annual Meeting, Santa Monica, CA. 2008.

³⁰ Interview with Mr John Page, Director General Workplace Transformation (Carling Campus), 2 May 2018.

badly needed document storage and additional work stations to accommodate their unexpected increase.³¹

Compounded the matter is Workplace 2.0 included a 12% space contingency, but due to space and cost constraints at the time of project development, DND opted for only 6% space contingency, exasperating the current space delta (approved by the VCDS, another Actor).³² Then there is Ellis Don, the contractor responsible for all construction at Carling Campus, who is also an Actor along with the building occupants and the ADM(IE) Project Manager. Ellis Don is focused on maximizing profits, the users need to have their operational requirements met, often with little to no understanding of what Workplace 2.0 is intended to be, and the Project Manager which must deliver on time and on budget while balancing the various competing demands.

PSPC designed Workplace 2.0 to optimize space and rationalize the overall footprint as AWA is known to save on real property costs.³³ This included expanding upon Treasury Board's pre-existing telecommuting policy to actively encourage and promote AWA.³⁴ This led to the assumption that on any given day, due to leave, travel and AWA, only 60-70% of the workforce would be present.³⁵ Some permanent employees would need dedicated work stations, but over half could have transient work stations. However, ADM(HR-Civ) is responsible for managing civilian policy (less those defined in the respective CBA or NJC), PSPC nor ADM(IE) can force ADM(HR-Civ) to amend their policies. Even then, military managers have resistance to

³¹ *Ibid.*

³² *Ibid.*

³³ Meister and Mulcahy... p 13.

³⁴ Canada, Treasury Board of Canada Secretariat, Telework Policy. December, 1999.

³⁵ Page, John, Interview...

implementing AWA in no small part to the difficulties in identifying metrics and control measures to support AWA where there is no direct employee supervision.³⁶

Here is where the respective public service unions (generally Union of National Defense Employees, but in some cases Public Service Alliance of Canada) interface as Actors as well. All employees can grieve any manager's decision to allow, or refuse, AWA though the grievance process takes years to go through to the final level and arbitration.³⁷ There is also the military itself, wide and disparate L1s who remain focused on operational effectiveness (with its own elusive definition and metrics), with disparate organizational cultures looking to be accommodated with one-size-fits-all approach.

One example is to increase accountability and optimize resources is the printer card technology that's part of Workplace 2.0 (implicating the Assistant Deputy Minister of Information Technology (ADM(IM)) as well as Shared Services Canada (SSE)) that allows to send a document to any printer, but it won't be printed until the user swipes their card at the printer. Individuals, such as L1 Executive Assistants, are no longer allowed to have their own printer, and there's no means to calculate the lost efficiency of the time it takes to walk to the printer and stand there waiting for the print job as a function of hourly wage to determine the cost-benefit analysis for an individual printer. SSE won't provide more printers as they claim they lack the funding to support any new requests.³⁸

To bridge these diverse Actors and increase unity of effort, ADM(IE) has instituted a bevy of Director-General level working groups (WG). There's the Quality of Life WG chaired by the Commander of Canadian Forces Support Unit (Ottawa), services WG, communications

³⁶ Canada, Department of National Defence, Review of Alternative Work Arrangements, Assistant Deputy Minister (Review Services), 1259-3-009, December 2016.

³⁷ *Agreement Between the Treasury...* Article 18.

³⁸ Page, John, Interview...

WG, security WG, information management WG, and a workplace transformation committee.³⁹ The issue remains one of policy and authority, whereby ADM(IE) must negotiate with other Actors for desired changes, for example information technology with ADM(IM) and/or SSC, or Director General Defence Security. Thus, we see how the Actors interact with the Process. Not only are there WG, but client meetings (with Ellis Don), meetings with PSPC, and the entire machinations of the project approval process (the intricacies exceed the scope of this paper). All of this is intended to successfully implement Workplace 2.0, yet again this is hampered by disparate responsibilities.

One of the greatest challenges for implementing Workplace 2.0 is developing metrics to measure success. So far, outside of the WG, there is informal feedback mechanisms consisting of the Director of Transformation (ADM(IE)) walking and talking to building occupants (after they are installed in Workplace 2.0) and surveys. However, surveys are flawed as they rely upon self-reporting (often targeting the segment of the target audience that has sufficient amount of spare capacity to participate on a voluntary basis) and is essentially a collection of individual opinions on the comfort level of the new workplace. This is exemplified by both the best aspect of Carling Campus, commute, is also the worse aspect and has nothing to do with Workplace 2.0.⁴⁰

Often irritants involve various actors to address, for instance the available concessionaries which is managed by Canex.⁴¹ Or size of gym (determined only by number of military personnel) but often used by civilian staff as well making them appear too crowded and small as there's no current policy entitlement for civilian employees to have gym access at taxpayer expense (ADM(HR-Civ) and Treasury Board). There are clearly measurable

³⁹ *Ibid.*

⁴⁰ Canada, Department of National Defence, NDHQ (Carling) Satisfaction Survey Executive Summary. October, 2017.

⁴¹ Page, John, Interview...

improvements, the focus on natural light has been well established as a boon to employee productivity, health and satisfaction. White noise generators reduce distractions and keep overall decibel levels within comfort zones.^{42 43} Overall, employees are largely satisfied with Workplace 2.0, and it does increase collaboration. However, the lack of applying and reporting upon defined metrics (when such metrics exist in industry^{44 45}), prevents a true determination of overall effectiveness.

One of the key processes external to ADM(IE) is the military's posting cycle and the challenge with keeping champions engaged from the various Actor organizations. Over time, the transformation of the workplace has devolved into a move, diluting the original intent.⁴⁶ Ancillary workspaces repurposed, AWAs not widely supported/implemented, few workers taking the time to learn about Workplace 2.0 (in terms of intent and how to maximize the benefits, available in a lengthy move publication⁴⁷), and implicated Actors and authorities spread over many organizations inhibiting a holistic and unified Process to implementation.

This paper clearly established that while there are benefits to the Workplace 2.0 Programme, when implemented within DND its potential was limited by siloed responsibilities and authorities with no holistic overarching policy suite. Decades of poor infrastructure management triggered Centralization. When analysing Workplace 2.0 at Carling Campus through the prism of the Walk Gilson triangle, it brings to sharp focus how the plethora of Actors

⁴² *Ibid.*

⁴³ Veitch, J. A., Charles, K. E., Newsham, G. R., Marquardt, C. J. G., and Geerts, J.. "Environmental Satisfaction in Open-Plan Environments: 5. Workstation and Physical Condition Effects" National Research Council Canada, Institute for Research in Construction. Ottawa, Ontario. 2003

⁴⁴ Meister and Mulcahy... p 37-38.

⁴⁵ Hoendervanger, Jan Gerard & Le Noble, Vincent & Mobach, Mark & W. Van Yperen, Nico. (2015). "Tool Development for Measuring and Optimizing Workplace Utilization in Activity-Based Work Environments" University of Applied Sciences, Groningen, Netherlands, 2015.

⁴⁶ Page, John, Interview...

⁴⁷ Canada, Department of National Defence, NDHQ Carling Client Move Instruction Package V 3.0. April, 2018.

with disparate responsibilities fails to harmonize a cohesive reconciliation of ideal workplace. By assessing the implementation of Workplace 2.0, it will enable a series of lessons learned that should help guide the next iteration of the office environment of the future, Activity Based Workplace, already in the initial development stages at PSPC.⁴⁸ This should help improve, but won't solve, the wicked problem that remains creating the ideal workplace.

⁴⁸ Treasury Board of Canada Secretariat, Activity Based Workplace, Accessed 28 May 2018.

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