

TN TATEM Middle SCHOOL

FACILITIES INSPECTION REPORT

Following Teachers' Walkout: **Monday – 08th April 2018**

Report Date: **April 15th, 2019**

Prepared by:

Office of the Safety and
Health Coordinator

The Cabinet Office
Occupational Safety and Health Unit
105 Front Street

C/O
129 Front Street – 3rd Floor, Ingham
& Wilkinson Building

No.	AREAS	FINDINGS	GENERAL RECOMMENDATIONS/CORRECTIVE ACTIONS	DIRECTED SPECIFIC ACTIONS & TIMELINES	ASSIGNED TO
1	Staff Room and Kitchen Area	<ul style="list-style-type: none"> Reported roof/ceiling leaks; evidenced by watermarks along portion of some walls, along with observed bubbling/peeling wall paint, as well as, watermarked and damaged ceiling tiles. Office equipment and other machines previously recommended to be removed from the area remains in place and in use. The likely negative impact on indoor air quality from their operation remains a concern. Heavy film of dust, dirt and related particulate matter build-up on top of vending machine which could provide suitable substrate for possible mould growth. Reported fluctuating functionality of the HVAC System and the supporting apparatuses serving this particular space; resulting in alleged significant variations in thermal comfort levels (though particularly subjective), as well as, 	<ul style="list-style-type: none"> Generally, identify all leaks and or sources of direct and fugitive water or moisture (inclusive of general building envelope areas, windows, doors and other areas) intrusion and effect necessary repairs. Improve general ventilation within this area Reduce excess amounts of materials and supplies, as well as, hoarding practices. Improve general cleaning, hygiene and sanitation practices in terms of scope, frequency and quality (pay special attention to hard to reach areas and such other spaces. 	<ol style="list-style-type: none"> Preparation for all roof/ceiling leak repairs must commence immediately and all repairs deemed necessary scoped and completed before or by the end of summer 2019. All office equipment and other machines must be relocated from the staff room immediately. Immediately undertake an engineering assessment of the HVAC System and its 	Ministry of Education – Facilities Department, School Administration and Ministry of Public Works

		<p>related concerns regarding poor ventilation.</p> <ul style="list-style-type: none"> • Old and worn fabric wrapped furniture remains in place, as well as, these items are poorly cleaned and otherwise maintained giving rise to surface mould growth and increasing the potential for airborne mould. • General and routine cleaning within the staff room kitchen areas room remains unsatisfactory. As was previously indicated in earlier reports, the scope (detail), quality and frequency of cleaning remains insufficient to achieve the desired level of acceptable hygiene and sanitation, as well as, to avoid the potential negative effects on indoor air quality and any probable resultant associated effects on personnel health, safety and wellbeing. • The cupboards (top surfaces, drawers, shelves) all exhibited signs of poor and improper cleaning, evidenced by insect and rodent droppings, dirt and other particulate matter build-up on, within and around surrounding areas. 	<ul style="list-style-type: none"> • Improve storage and general housekeeping practices • Allow sufficient space between wall areas and furniture, fixtures and equipment as would be appropriate. • Limit and control the liberal use of air fresheners, deodorizers, insecticides, as well as, reduce the use of such related products and associated apparatus (including the burning of incense and candles). 	<p>related supporting apparatuses within the next Thirty to Forty-five (30-45) days. Any and all faults identified via this report must be completed by end of summer 2019. Alternatively, decommissioned the HVAC system, installed new system or appropriately sized cassette/split air conditioning units.</p> <ol style="list-style-type: none"> 4. Moving forward, all windows must be opened for at least 1-2 hours each day to facilitate stale air exhaustion and natural cross-ventilation (all air conditioning systems must be off during these times). 5. Immediately improve the scope, frequency and quality of daily and routine cleaning. Moving forward, all the School's facilities must be deep cleaned once per quarter. 6. Permanently isolate the kitchen from the general staff room area and install separate and independent exhaust ventilation system; supported by the creation of natural cross ventilation options. 7. Replace all fabric wrapped chairs with alternative design and material types - made of materials that are easily cleaned and maintained. 	
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2	Room 221 (Darrel)	<ul style="list-style-type: none"> • Dirty Air conditioning unit • Dirt and dust build-up on top of storage cupboard • Microwave and Refrigerator previously Recommended to be removed from classroom remains in place and are still in use. 	<ul style="list-style-type: none"> • Clean and service Air Conditioner Unit on a routine basis • Clean dust, dirt and other particulate matter build-up from storage cupboard top • Remove microwave and refrigerator from classroom. • Routinely cut-back and keep vegetation to the back of classroom well pruned or otherwise manicured. 	<ol style="list-style-type: none"> 1. Immediately clean and service air conditioning unit. Following cleaning and servicing of unit; moving forward, unit must be cleaned and service checked at least once per quarter or more frequently as condition of the unit might dictate. 2. Immediately deep clean, disinfect and sanitize classroom; inclusive of all furniture, materials and supplies. Items are to be sorted, all excesses and obsolete materials must be removed. Moving forward, all materials and supplies must be properly kept and stored in an orderly fashion. 3. Immediately remove microwave and refrigerator from classroom 4. Immediately cut-back overgrown vegetation, prune all trees and maintain in a good manicured state on a sustained basis. Additionally, all detritus material must also be removed from the vegetative areas around the School (particular attention must be paid to the back areas and courtyard). 	Ministry of Education – Facilities Department, School Administration, Ministry of Public Works and Department of Parks
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3	Room 203 (French Room)	<ul style="list-style-type: none"> • Personnel reported experiencing breathing difficulties and other related unexplained suspected health symptoms. • Suspected water/moisture damaged inner corridor external and partitioning dry walls 	<ul style="list-style-type: none"> • Further medical review and consultation with personnel attending physician should be pursued to determine exact etiology of identified and associated symptoms • Dry walls inappropriately installed at various points throughout the school should be reviewed and the necessary changes made. 	<ol style="list-style-type: none"> 1. Office of the Safety and Health Coordinator to pursue further discussions with alleged complainants once identities are known. Additionally, authorization will be sought from suspected complainants (once identified) to pursue discussions with the attending physician (s) of such personnel (if personnel grant such permission) in further attempts at pin-pointing potential root cause (s), as well as, to help determine any likely potential contributory factors from the School's facilities, in any. 2. Dismantle all dry wall along inner corridors in the vicinity of room 203 and other areas and replace these with solid block and concrete walls as structural partitioning. 	<p>Office of Safety and Health Coordinator and Personnel Physicians</p> <p>Ministry of Public Works and Ministry of Education's Facilities Department</p>
4	Room 202	<ul style="list-style-type: none"> • Reported complaints of pungent stench like unto hydrogen sulfide or methane gas, as well as, routine fugitive intrusion of flies. • Some personnel have confirm pre-existing medical issues and concerns relating to upper respiratory conditions and general allergy • Custodial Storage Closet located just outside to the left of room entry/exit, as well as, share common ceiling cavity; though partially separated by incomplete sealed raised dry wall partition. 	<ul style="list-style-type: none"> • Reported stench probably emanates from adjacent facilities surrounding the School and the marshy/swamp area located close - by • Further medical review and consultation with personnel attending physician should be pursued to determine exact etiology of identified and associated symptoms • Generally, isolate and seal incompatible facilities and segregate uncomplimentary operations and facilities uses. 	<ol style="list-style-type: none"> 1. Office of the Safety and Health Coordinator to conduct further review and related investigations into allegations around the suspect stench of methane/hydrogen sulfide gas (H₂S/ CH₄): Quite likely stench is suspected to be a natural phenomenon - due to the natural biological processes of nature associated with biodegradation of organic matter within the marshy/swampy area and 	<ol style="list-style-type: none"> 1. Ministry of Education – Facilities Department and School Administration, Ministry of Public Works 2. Office of the Safety and Health Coordinator

				<p>possibly other facilities close to the School – resulting in the fugitive stench periodically permeating the atmosphere)</p> <ol style="list-style-type: none"> 2. Once the suspected stench/odor is detected personnel using the room are to close door and windows and switch air conditioning unit on. 3. Install window screens by end of summer 2019. 4. Permanently separate ceiling cavity space between classroom and custodial storage/workroom by end of summer 2019. Additionally, install mini- extractor or alternative system in custodial room to aid ventilation. Alternatively, review the potential relocation of custodial supplies store/workroom closer to the available spaces next to the bathrooms. 	
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5	Room 235	<ul style="list-style-type: none"> • Reported complaints of breathing difficulty being allegedly experienced by students (approximately 2) • Reported roof/ceiling leaks; evidenced by water marked and damaged ceiling tiles. • Reported difficulties with windows being unable to be opened or inoperable • Window screens missing from some windows • Classroom Room houses an extensive array of books and related reading materials and supplies that are poorly kept (dusted, clean or otherwise appropriately maintained). • Entry Door Storage Closet – contains manifestly excessive of amounts of items, supplies and materials; all of which are not sorted, properly stored or being kept. 	<ul style="list-style-type: none"> • Generally, identify all leaks or source of fugitive water or moisture (inclusive of general building envelope areas, windows, doors and other access points) intrusion and effect necessary repairs. • Generally, improve ventilation • Reduce excess amounts of materials and supplies, as well as, hoarding practices. 	<ol style="list-style-type: none"> 1. Preparation for all roof/ceiling leak repairs must commence immediately and all repairs deemed necessary be completed before or by the end of summer 2019. 2. Immediately effect repairs, install necessary screens to windows and start opening same for at least 1-2 hours each day; irrespective of windows not having screens, windows should still be opened at least partially (halfway up) to facilitate natural cross ventilation . 3. Immediately clean, dust and HEPA vacuum all books, reading and related materials. Moving forward, all such items must be so cleaned at least twice per year or more frequently and as conditions may dictate. 4. Primary user of this classroom must immediately commence the process of sorting, and arranging all materials, books and supplies being housed in the storage closet with the focus being to achieve significant reductions in quantities, the identification and eliminate of old and obsolete items, materials and supplies. Moving forward, the practice of hoarding outdated and obsolete materials must be addressed on a sustained basis. 	<p>Ministry of Education – Facilities Department and School Administration, Ministry of Public Works</p> <p>Office of the Safety and Health Coordinator</p>
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				<p>5. Immediately deep clean classroom, items, and materials and supplied within room.</p> <p>6. Safety and Health Coordinator to a review of concerns of alleged student (s) being impacted with the School and Department of Education (if and when identity of suspected students is confirmed, as well as, if written consent is obtained from parent or Legal Guardian of such students to help determine alleged links to the School's facilities, if any.</p>	
6	Room 233 – Computer Lab	<ul style="list-style-type: none"> • Poor cleaning of computers and other ICT Equipment, systems and apparatuses • Poor cleaning of existing chairs, as well as, inappropriate type of chairs • Reported roof/ceiling leaks; evidenced by watermarked and damaged ceiling tiles • Dirty air conditioning unit 	<ul style="list-style-type: none"> • Improve cleaning and general housekeeping activities within primary and adjacent rooms • Improve cleaning of chairs and review the appropriateness of the current types of chair for classroom • Identify and repair all leaks and sources of fugitive water and or moisture intrusion • Routinely clean and service air conditioning unit • Generally, improve ventilation 	<ol style="list-style-type: none"> 1. Immediately deep clean classroom, items, and materials and supplied within. Quarterly deep cleaning must be pursued thereafter. 2. Replace the current types of chair and replace with chairs that are better suited and more appropriate for this type of classroom; made of material that will afford easier cleaning, improve hygiene and sanitation. 3. Preparation for all roof/ceiling leak repairs must commence immediately and all repairs deemed necessary be 	Ministry of Education – Facilities and IT Departments and School Administration, Ministry of Public Works

				<p>completed before or by the end of summer 2019.</p> <ol style="list-style-type: none"> 4. Immediately clean and service air conditioning unit and ensure, inspection, cleaning and routine maintenance of unit on a quarterly basis. 5. Immediately start open windows for between 1-2 hours daily to allow for fresh air intake and natural cross ventilation. 6. Immediately remove and reposition Smart Board to allow for windows to be open (reorganization of the internal layout of the classroom will be required). 	
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7	Room 249	<ul style="list-style-type: none"> • Reported roof/ceiling leaks; evidenced by watermarked and damaged ceiling tiles • Poor cleaning and housekeeping • Over grown palm tree outside window • Decoration of ceiling tiles • Dirty air conditioning unit and ceiling fans (dirt and particulate matter build-up) • Teacher reportedly experiences routine slight niggling throat sensation • Inappropriate storage of newspapers and general insufficient use of allotted storage space 	<ul style="list-style-type: none"> • Generally, identify all leaks or source of fugitive water or moisture (inclusive of general building envelope areas, windows, doors and other access points) intrusion and effect necessary repairs. • Clean out related storage area, eliminate all unwanted materials and supplies. Properly arrange all other items being kept or in use in order to make better and more efficient use of storage space areas • Generally, maintain all vegetation and green areas around school facilities • Discontinue the practice of decorating ceiling tiles • Consider alternative ways of storing newspapers and other such materials and supplies 	<ol style="list-style-type: none"> 1. Preparation for all roof/ceiling leak repairs must commence immediately and all repairs deemed necessary be completed before or by the end of summer 2019. 2. Immediately undertake deep cleaning of classroom, items, and materials and supplies within room. Quarterly deep cleaning must be pursued thereafter. 3. Particular attention is required to be given to baseboards and skirting areas to remove hardened dirt, wax, polishing map streaks. Tiles must be stripped/de-waxed. 4. Immediately discontinue the practice of decorating ceiling tiles. Remove those already decorated and replace with new tiles. 5. Clean-up and properly organize all materials and supplies being stored within all storage areas. Procure large size plastic container 	<p>Ministry of Education – Facilities Department and School Administration, Ministry of Public Works</p> <p>Department of Parks</p>
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				<p>storage bins for storing newspapers and other items</p> <p>6. Immediately clean and service air conditioning unit and perform cleaning and service checks on all units at least quarterly or as dictated by condition of unit.</p> <p>7. Immediately cut back overgrown tree at classroom window, as well as, the mould, smut and aphid infested ones around the courtyard reaching the third floor corridor balcony level.</p>	
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8	Room 319 (English)	<ul style="list-style-type: none"> • Reported complains of breathing difficulties and other alleged health issues by personnel • Some wall areas of classroom showed signs of peeling/bubbling wall paint • Reported sightings roach and rodents, as well as, their droppings • Poor cleaning and upkeep of fabric wrapped chairs and cushion pads • Extensive use of scented oils, air fresheners and other deodorized aerosols, including insecticide sprays and personal cleaning solutions. • Personnel confirm pre-existing respiratory conditions 	<ul style="list-style-type: none"> • Safety and Health Coordinator to continue to investigate concerns relating to reports of breathing difficulties in tandem with personnel and their attending physician (s) where permission is granted. • Reduce humidity and control other general baseline indoor air quality variables • Undertake pest management actions • Improve housekeeping and sanitation • Significantly reduce use of scented oils, air fresheners and other deodorizing aerosols, including household insecticide sprays and personal cleaning solutions and mixtures 	<ol style="list-style-type: none"> 1. General baseline indoor air quality variables must be controlled for; particularly Relative Humidity 2. Scrape and repaint all areas of showing signs of damaged paint work by end of summer 2019. 3. Immediately treat area against insect pests – rats, roaches and ants 4. Personnel are to immediately remove and discontinue the use and application of all scented oils, air fresheners and other deodorizing aerosols, including insecticide sprays and personal cleaning solutions 5. Immediately undertake deep cleaning of classroom, items, and materials and supplied within room. Quarterly deep cleaning must be pursued thereafter. 6. Personnel must better manage their preexisting condition (s) and significantly reduce, if not, totally eliminate the liberal use of scented oils, candles, air fresheners and other deodorized aerosols that have been inherent triggers for some of their conditions and symptoms and the self-inflicted aggravation of their 	<ol style="list-style-type: none"> 1. Ministry of Education – Facilities Department and School Administration, Ministry of Public Works 2. Office of the Safety and Health Coordinator
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				pre-existing medical condition (s).	
9	Room 318	<ul style="list-style-type: none"> Reported breathing discomfort 	<ul style="list-style-type: none"> Investigate alleged indoor air quality concerns to help pin-point root cause in order validate veracity of concern (s), if any. 	<ol style="list-style-type: none"> Immediately undertake deep cleaning of classroom, items, and materials and supplied within room. Quarterly deep cleaning must be pursued thereafter. Office of the Safety and Health Coordinator to review and conduct further investigation into personnel concerns regarding alleged breathing difficulties. 	<ol style="list-style-type: none"> Ministry of Education – Facilities Department and School Administration Office of the Safety and Health Coordinator
10	Library	<ul style="list-style-type: none"> Reported roof/ceiling leaks; evidenced by watermarked and damaged ceiling tiles, damaged book cases, containers set to collect water, etc. Damaged building envelope around class window areas and door leading to mini-balcony Previously wet carpet still in place, along with previous materials use to mop-up water from leaks. Excess amounts of and in appropriate storage of guided paper reading books Poor storage and general housekeeping practices at reception desk, Librarian’s Office, Workroom, Conference Room and Storage Room. 	<ul style="list-style-type: none"> Generally, identify all leaks or source of fugitive water or moisture (inclusive of general building envelope areas, windows, doors and other access points) intrusion and effect necessary repairs. Generally, seek to improve facilities maintenance by pursuing preventative, predictive and strategic facilities upkeep strategies and techniques Improve general housekeeping across all areas the library. 	<ol style="list-style-type: none"> Preparation for all roof/ceiling leak repairs must commence immediately and all repairs deemed necessary be completed before or by the end of summer 2019; inclusive of necessary repairs to building envelope, windows and doors. Immediately remove the guided reading books from the library and place them in alternative storage areas, as well as, seek to reduce the quantities of such books. These books must be dusted, cleaned and HEPA vacuum and be properly maintained going forward. Immediately remove and discard previously wet carpets and other fabric materials. All other carpets and like 	Ministry of Education – Facilities Department and School Administration

				<p>materials must be removed from the library and no material of similar nature is to be replaced in the library. However, an alternative to materials such as decorative seating rubber mats maybe used.</p> <p>4. All materials, items and supplies being inappropriately stored at the named locations within the library must be immediately sorted and placed in proper order and storage. Alternatively, seek to donate excesses or discard unwanted, obsolete and damaged items.</p>	
11	D & T Room 139	<ul style="list-style-type: none"> • Non-functional Dust Extractor System • Poor cleaning, housekeeping and excess amounts of dust, dirt and particulate matter build-up • Improper storage, upkeep and maintenance of materials and supplies • Obstructed emergency exit by inoperable machine • Broken/damaged emergency eye wash system • Dust laden carpet roll improperly stored. • Watermarked and damaged ceiling tiles within some sections, as well as, complete removal of ceiling • Poor ventilation, generally • Non-compliant First Aid Kits 	<ul style="list-style-type: none"> • Effect repairs to dust extractor system or replace with new one • Comprehensively clean out workshops, properly arrange all materials and supplies being stored. Eliminate all excesses and keep workshop in a neat and orderly state moving forward. • Remove machine obstructing emergency exit door or remove from room if same cannot be repaired and returned to intended use. • Repair and or replace broken emergency eyewash system. Alternatively, install new emergency eyewash/shower combination system with proper waste water drainage system. • Ensure proper medical first aid kits are provided 	<ol style="list-style-type: none"> 1. Dust extractor system must be repaired or new one installed by end of summer 2019 2. Immediately undertake comprehensive deep cleaning of classroom, items, and materials and supplies within al workshops and lecture room. Quarterly deep cleaning must be pursued thereafter. 3. Instructor must incorporate good housekeeping and cleaning-up-time and practices before, during and after workshop sessions. 4. Immediately install temporary emergency eyewash stations 	Ministry of Education – Facilities Department and School Administration, Ministry of Public Works

				<p>5. Permanent eyewash stations must be installed by the end of summer 2019</p> <p>6. Immediately procure and install Emergency Medical First Aid Kit, as well as, ensure that instructor's First Aid and CPR credentials are valid/current.</p>	
12	D&T Room 139 – Internal Design Room	<ul style="list-style-type: none"> • Damaged Delta Drill Press and Scroll Saw • Damaged and opening ceiling cavity • Obstructed Emergency Exit Door • Non-compliant First Aid Kit and unsanitary • Non-functional Emergency Eyewash System • Broken electrical sockets • General poor housekeeping/improper storage 	<ul style="list-style-type: none"> • Repair all damaged or otherwise defective equipment or replace with new ones. • Effect repairs to damaged ceiling and seal all open cavities • Procure and install proper first aid kit and maintain materials and supplies in a sanitary and hygienic state. Additionally, verify the currency and validity of personnel First Aid and CPR credentials and ensure these are place on file and made available for inspection upon request. • Repair and or replace broken emergency eyewash system. Alternatively, install new emergency eyewash/shower combination system with proper waste water drainage system. • Effect repairs to broken and otherwise damaged electrical sockets • Generally, improve cleaning by remove all excess materials and supplies and encourage teacher to emphasis good orderly work, cleanliness and housekeeping as key parts of every lesson plan 	<ol style="list-style-type: none"> 1. Take immediate steps to complete repairs to damaged and otherwise out of service machines and equipment. Alternatively, donate such items and or replace them with new ones. 2. Complete repairs of all electrical faults by end of summer 2019 3. Sort and eliminate all access materials and supplies. 4. Require students to take home all completed project work (s) and reduce the amounts of such items being housed in the room once completed or grades have been assigned. 	Ministry of Education – Facilities Department and School Administration, Ministry of Public Works

13	D&T Room 139 – Lecture Room	<ul style="list-style-type: none"> Watermarked and damaged ceiling tiles Dirty and mould contaminated air conditioning unit; along with poor waste water drainage 	<ul style="list-style-type: none"> Identify all leak and other points of water or moisture intrusion and effect necessary repairs and replace all damaged ceiling tiles Clean air conditioning unit, routinely service and inspect to ensure proper functionality. Additionally, properly channel away waste water 	<ol style="list-style-type: none"> Complete all roof/ceiling leak repairs by end of summer 2019. Immediately clean and service air conditioning units. Ensure service and maintenance checks on these units are performed on a quarterly basis or sooner or as condition of the units dictate. 	Ministry of Education – Facilities Department and School Administration, Ministry of Public Works
14	Custodial Closet and Outside Storage Room	<ul style="list-style-type: none"> Poor housekeeping and improper storage Mould contaminated walls, along with bubbling/peeling wall paint. 	<ul style="list-style-type: none"> Sort and properly arrange all materials and supplies and take steps to eliminate all excesses, along with unwanted items Clean mould from walls, scrape wall sections with peeling/bubbling paint works, treat areas against mould and repaint as needed. 	<ol style="list-style-type: none"> Require custodial personnel to routinely clean, properly arrange and keep all materials and supplies properly arranged in and good order within their storage units and elsewhere. Effect necessary repairs to custodial areas, as well as, require them to clean practice good housekeeping within their own controlled spaces, as well as, reduce cluttering. 	Ministry of Education – Facilities Department and School Administration, Ministry of Public Works
15	Outside Areas - Back of Gym and D&T Workshops	<ul style="list-style-type: none"> Overgrown vegetation 	<ul style="list-style-type: none"> Cut back vegetation and keep area manicured to help control overgrowth of shrubs, grass and other vegetation 	<ol style="list-style-type: none"> Immediately cut-back and keep vegetative areas well-manicured. 	Ministry of Education – Facilities Department and School Administration, Ministry of Public Works
16	Guidance Department (237)	<ul style="list-style-type: none"> Emergency exit opens to roof without any supporting climbing down steps or other means of evacuation escape Student Bathroom – Broken hand towel holder Staff bathroom – No sanitary napkin bin 	<ul style="list-style-type: none"> Complete emergency evacuation route system. Repair hand towel holder or procure and install new one 	<ol style="list-style-type: none"> Construct and or install escape steps or ladder from roof to ground to complete emergency evacuation path by end of summer 2019 	Ministry of Education – Facilities Department and School Administration, Ministry of Public Works

		<ul style="list-style-type: none"> Room 239 – improper storage and poor housekeeping Room 238 – Heavy build-up of dust and other particulate matter on exhaust vent Meeting Room - improper positioning of book case along corridor, causing narrowing and subsequent obstruction of passageway Kitchenette – First Aid Kit improperly positioned and non-compliant 	<ul style="list-style-type: none"> Procure and install sanitary napkin bin to female bathroom. Sort and properly arrange all materials and supplies; eliminate all excesses Remove book shelve and or reposition elsewhere to correct present breaches Reposition first aid kit next to personnel who are trained in first aid and CPR. Accordingly, procure new supplies to achieve compliance. 	<ol style="list-style-type: none"> Repair hand towel holder within 30 days or sooner. Service air conditioning systems and immediately clean vents. Perform cleaning and service checks on these systems every quarter or more frequently as conditions may dictate. Immediately procure and install Emergency Medical First Aid Kit, as well as, ensure that instructor’s First Aid and CPR credentials are valid/current Immediately remove book case from along corridor and placed in or at alternative location Immediately undertake deep cleaning of areas and perform quarterly deep cleaning thereafter. 	
17	Auditorium	<ul style="list-style-type: none"> Improper storage and stock of chemicals and supplies obstructing emergency exit Backstage Room – Mould contaminated ceiling tiles, floors and walls Bathrooms – Highly unsanitary and Unhygienic Backstage Store Rooms (Lower level) – Poor ventilation, mould contaminated walls and ceiling tiles (along passage ways) 	<ul style="list-style-type: none"> Obstructed emergency exits Identify all leaks and points of water/moisture intrusion and effect necessary repairs, as well as, replace all damaged ceiling tiles with new ones. Deep clean, disinfect and sanitize bathroom, as well as, effect all required repairs Improve ventilation to backstage and lower level rooms either via mechanical or natural means. Clean mould from all walls and replace all mould contaminated ceiling tiles. 	<ol style="list-style-type: none"> Remove all materials and supplies obstructing emergency exit and place such items into proper storage Complete all leak and damaged wall repairs by end of summer 2019 Improve ventilation in all mentioned areas either by mechanical or natural means by end of summer 2019 	Ministry of Education – Facilities Department and School Administration, Ministry of Public Works

18	Music Room	<ul style="list-style-type: none"> • Poor indoor air quality evidenced lingering mould stench and general poor ventilation • IT Server Closet (outside – between music room and Auditorium side entrance); mould contaminated walls. • Signs of bubbling and peeling wall paint, along with watermarked damages along walls. • Water damaged flooring • Fibrous acoustic wall boards containing mites, along with a build-up of particulate matter with increased potential for mould growth • Peeling wall paint and skirting materials • Stair Well immediately outside (back) music room adjacent to pump room – highly unsanitary – Excessive dirt and particulate matter build-up on wall. 	<ul style="list-style-type: none"> • Improve indoor air quality and facilities maintenance • Generally, improve cleaning and housekeeping within and around areas surrounding music room (side and back areas) 	<ol style="list-style-type: none"> 1. Dismantle music room floor and replace with new concrete tile flooring by end of summer 2019 2. Conduct engineering assessment of the HVAC system within the next 30-45 days or decommissioned HVAC system and install independent split or cassette units. HVAC/Split/Cassette Units are to be clean, serviced checked once per quarter or more frequently as condition may dictate. 3. Effect all wall, roof/ceiling repairs by end of summer 2019. 4. Replace all Fibrous acoustic boards and replace with alternative material types by end of summer 2019 5. Undertake mold deep cleaning of IT Server Closet and eliminate mould. Improve general ventilation to this space and perform routine cleaning (at least once per week) 6. Power-wash back outside walls behind music room and passage way leading to upper stairwell. Complete repairs currently in progress inside pump room and surrounding areas. Remove drywall installed along stairwell, 	Ministry of Education – Facilities Department and School Administration, Ministry of Public Works
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				reopen stairwell to regular use by end of summer 2019	
19	Court Yard	<ul style="list-style-type: none"> Corroded Metal Benches, along with related damages Partially clogged drains 	<ul style="list-style-type: none"> Improve drain cleaning, maintenance and upkeep. Improve maintenance and upkeep of courtyard installed furniture and fixtures 	<ol style="list-style-type: none"> Treat benches against corrosion and effect necessary repairs De-clog drains and routinely clean and maintain these on an ongoing basis 	Ministry of Education – Facilities Department and School Administration, Ministry of Public Works
20	328 – Science Labs	<ul style="list-style-type: none"> Poor Housekeeping and improper storage and mixing of chemical materials and supplies No hazard communication binders available or MSDS/SDS Sheets Early mould growth along window sills Missing sink from lab workstation Water marked and damaged ceiling tiles No emergency eyewash system or available solutions Non-functional Fume hood system 	<ul style="list-style-type: none"> Sort and properly arrange all chemical materials and supplies being stored according to their hazard types and chemistry profile Secure MSDS/SDS Sheets for all chemical materials and supplies being stored and prepare hazard communication information binder that is to be kept on site and made readily available for inspection upon request Clean mould from window sills Replace missing sink from lab workstation Install emergency combination eyewash/shower system and make available bottled solutions in the interim Effect repairs to non-functional fume hood system or replace with new one 	<ol style="list-style-type: none"> Generally, all Science labs must be completely renovated and be equipped with all proper and functioning features, and related supporting apparatus by end of summer 2019 All chemical materials and supplies must be sorted and all obsolete items packaged and prepared for collection and removal by the Hazardous Waste Unit within Thirty (30) days. All chemical materials and supplies must be properly identified and cataloged (establishment of a chemical inventory listing) within Thirty (30) days. Creation of MSDS/SDS Folder for chemicals, materials and supplies must be completed within the next Thirty (30) 	Ministry of Education – Facilities Department and School Administration, Ministry of Public Works

				<p>days and ready for inspection upon request</p> <ol style="list-style-type: none"> 5. Temporary eye wash solutions stations must be erected within each science lab, including prep-room area immediately 6. At least one chemical fume hood must become properly functional (Unit in Prep-room should be given priority) by end of summer 2019 7. All science labs and their related systems, fixtures (inclusive of plumbing and gas line systems must be fully functional, in addition to all permanent eyewash/shower systems) by end of summer 2019 8. Procure and install at three (3) standard emergency laboratory chemical spill kits within thirty (30) days. 9. All laboratory equipment must be cleaned, properly organized in labeled cupboards/cabinets/cupboard drawers and storage cabinets within the next Thirty (30) days. 10. Procure and install at least one (1) emergency first aid kit within each science lab immediately and Prep-Room 11. Chemical Stores must be properly organized and all 	
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				<p>chemical supply containers properly labelled or otherwise clearly identified.</p> <p>12. All chemical materials and supplies being housed in flame retardant cabinet and elsewhere throughout the lab must be properly organized and stored according their respective chemistry (profiles and chemical properties).</p>	
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Overall Assessment:

Many of the concerns and issues that were previously identified at TN Tatem Middle School that were previously addressed for the most part, have apparently resurfaced in and across certain areas of the School’s facilities again. This has resulted in the latest concerns and issues being raised by teachers. Previous reports did outline various concerns; specifically related to the general maintenance and overall upkeep of the School’s Plant concerning roof and or ceiling leaks, excess fugitive moisture intrusion into the building via damaged areas of the Building envelope, poor housekeeping and general cleaning, sanitation and hygiene practices. Additionally, earlier reports did warn that if timely proactive steps were not taken to remedy the litany of minor outstanding findings that had remained to be resolved that they would eventually morphed into greater and more serious issues. This now appears to be the case.

From the inspections conducted on April 10th, 2019; it was observed that some outstanding works were still yet to be completed from the time of the previous inspection reports. These incompleteness works have now served as the catalyst for further damages, even to areas that were previously rectified. Leaking sections of the roof/ceiling continue to plague the School, although intermittently in most cases and has caused water damage to areas previously addressed, as well as, new areas that previously had no damage. Inconsistencies in the scope, frequency and quality of cleaning remains a challenge and must be addressed through training, increase monitoring and supervision and improve management of custodial activities and personnel. Excess vegetation and overgrown vegetation around the school is required to be routinely cut back and all green areas kept in an acceptable manicured state on a sustainable basis.

Poor housekeeping, the improper storage of materials and supplies and the cleaning, upkeep and maintenance of such still remains an issue within several classrooms and related facilities as have been outlined throughout previous sections of this report. Some teachers continue to hoard outdated, obsolete and infrequently used materials and supplies and of which they have failed to properly keep and maintain. The school also has several areas and rooms that appeared to be rarely used and has thus been allowed to fall into a state of disrepair and the gathering of junk overtime, although some of these same areas were highlighted for priority attention in prior reports.

The above described conditions have all summarily contributed to some of the basic parameters used to gauge the quality of indoor to be not in conformance with international best practice standards. As such, and given the details of previous reports, the remainder of in progress works to yet to be completed, alleged complaints from teachers and the details of the most recent Indoor Air/Environmental Quality Assessment of February 2019; TN Tatem Middle School facilities continue to face some challenges. This means:

- The School’s facilities are required to be given immediate priority attention before conditions are further reduced to 2016/2017 levels
- The school’s facilities continue to experience general upkeep and routine maintenance challenges in line with previous issues outlined in earlier reports that must be systematically be addressed in order to bring in progress works to final and satisfactory completion, as well as, to proactively resolve newly raised and likely potential issues
- Ventilation throughout and across various points of the School must be created via improvements and the optimal upkeep and maintenance of all HVAC systems and their related supporting apparatuses.

- The scope, frequency and quality of cleaning must be improved via the training, increased monitoring and supervision and management of custodial personnel.
- Improvements in housekeeping, de-cluttering of spaces, proper storage of materials and supplies, reductions in hoarding and reduction in junk must be achieved.
- Significant reductions in the use of scented oils, air fresheners and other deodorizing aerosols, including household insecticide sprays and personal cleaning solutions and mixtures must be achieved.

However, the following areas are required to undergo go immediate and comprehensive deep cleaning given the respective findings outlined in the specific foregone sections of this report:

- Area/Room 202-205
- Area/Room 221
- Area/Room 224
- Area/Room 233
- Area/Room 235
- Area/Room 249
- Area/Room 302/310
- Area/Room 314
- Area/Rooms 318-319
- Library
- The Design and Technology (D&T) Workshops and Lecture Room
- The Science Laboratories and Prep-Rooms and supporting areas
- The Music Room the adjoining back system rooms, stair well and IT server room.
- Auditorium – Back stage Areas generally and the lower level storage spaces and bathrooms
- Outdoor Areas (back and side areas with overgrown vegetation; and routine maintenance of these areas)
- The Gymnasium and its associated and supporting facilities

Once cleaning has been completed in the above listed areas, cleaning should then be followed up indoor air quality testing whilst these spaces are occupied and are in normal use in order to get as close as possible a true and representative sample and general baseline profile of the quality of air within these spaces.

Additionally, the following rooms have been identified to undergo more advance testing to assess other indoor air assessment variables such as PM2.5 and VOC screenings:

- Area/Room 202 - 203
- Area/Room 221
- Area/Room 233
- Area/Room 235
- Area/Room 249
- Area/Room 319
- Staff Room

Review of Investigation and Report of Accident and Dangerous Occurrence at Work OSH Forms Completed and Received:

A total of Nine (9) completed OSH 1 Forms were received on 15th April 2019. Of the nine forms received; eight (8) related to very vague and otherwise generalized report of complaints by teachers and whilst one (1) reported concerns related to a student. All the completed OSH Forms that were received indicated 09th April 2019 as the signed date of the Chair of the Workplace Safety and Health Committee for TN Tatem Middle

School. It is also instructive to note that these said forms were only signed and dated after the absence of the required dates and signatures were queried at the meeting held between representatives of the teachers, PTSA and the Chairperson of the TN Tatem Middle School Workplace Safety and Health Committee on the 09th April 2019 and of which this Office was party to.

Additionally, it is also important to note that five (5) out of the nine (9) forms submitted indicated no date or time whatsoever to indicate when the alleged concerns being reported or complained about occurred. The other remaining three (3) forms indicated non-specific timelines but did indicate a time period in terms of a range but again, they were non-specific. Only one (1) form indicated a specific time date alleging exactly when any particular issue or complaint specifically or actually occurred.

In summary, the complaints from teachers and one student were very general in nature. The symptoms that were reportedly being experienced were also not deemed specific enough to determine any specific etiology, any direct cause and effect relationships or reliable and objective associations in the absence of any doctor's report or other medical information for a trusted source. Nonetheless, the symptoms complained about are outlined below; all of which will require further investigations and objective medical diagnosis to validate:

- A. One form submitted on behalf of a teacher stated that the teacher indicated not feeling well at approximately 7:15 A.M one morning. The alleged illness was reportedly experienced when entering a particular classroom. The form further indicated complaints related to "eyes burning and coughing that irritated". There was no indication as to whether this teacher sought medical help or was able to work for the remainder of the day in question or had to leave work due to the suspected illness being referenced.
- B. One form submitted on behalf of a teacher stated that the teacher complained of hoarseness by or an each Friday. A further review with this particular teacher would be required to be undertaken in order to gain a more fulsome understanding of what is being experienced or suggested.
- C. One form submitted on behalf of a teacher stated that the teacher complained of chest infections and developed asthma and continued to be susceptible to upper respiratory issues. No additional medical details or a doctor's report to further help validate any of these concerns were received or attached to the OSH 1 form submitted for this particular individual.
- D. One form submitted on behalf of a teacher (a substitute teacher) stated that the teacher complained of itching, burning and watery eyes and strong smell of mould in classrooms. These alleged symptoms are again quite general in nature and were not substantiated by any reliable medical reports. There was also no indication as to when these alleged symptoms started to occur and or for how long they might have even lasted for.
- E. One form submitted on behalf of a teacher reported state the teacher complained of coughing and mucus and alleged poor air quality. These complaints would need to be further investigated to in order to lend objective support to any of them since the details provided are quite limited.
- F. One form submitted on behalf of a teacher stated that the teacher complained of breathing difficulties, allegedly when inside of the building. The teacher further indicated being "tested positive for mold – 12/15" – It remains unclear what is meant by "tested positive for mold", as well as, the possible causes for the reported complaints of experiencing breathing difficulties. These claims would be required to be further medically in tandem with field investigations in order objectively evaluate them and or determine the true substance of their merit.
- G. One form submitted on behalf of a teacher stated that the teacher allegedly complained of constant (ongoing) "headaches, resulting in blurred vision and mold in rooms" from 2018-2019. However, there were no specific start point or date to indicate the onset of the issues being complained about, notwithstanding the indicate time range period being suggested. Additionally, the locations and or the exact rooms were not indicated or otherwise identified on the form submitted. Again, there were no medical reports attached to the OSH 1 to help validate and or help substantiate these claims. As such, these claims would need to be further investigated in order to determine the real substance of their merit.
- H. One form submitted on behalf of a teacher stated that the teacher is alleging a host of suspected "allergic reactions to specific molds, yeasts and some foods". The completed form for this particular teacher further indicated that the teacher has undergo allergy testing twice and an each occasion results indicated that there is more suspected allergic reactions. However, as to what further allergens this teacher might be affected by remains unclear, as well as, the circumstances surrounding the complaints of this particular individual is further compounded by the absence of any supporting objective and reliable medical diagnostic

reports or other verifiable information that might lend support, if any to the claims being made. The teacher also further indicated that there might be need for further allergy tests to be conducted which suggests there might still be unresolved and inconclusive health issues which the attending physicians for this individual are still working through in order to make or confirm final diagnosis, even with some variables possibly already confirmed, yet final diagnosis remains unconfirmed. Primary symptoms being experienced included the following – burning nose and eyes, mucus build-up, shortness of breath, stomach issues, loss of memory and sleeping more than usual, feeling lethargic, headaches, rashes on body, bags under eyes (reported sinus problems). Notwithstanding the teacher’s complains of various symptoms no medical reports were submitted with the form in order to facilitate an objective review of same and as such further investigations would be required to objectively review any and all such concerns.

- I. One (1) completed OSH 1 form was received alleging complaints on behalf of a student complaining of itchy and watery eyes. The form indicated that the timeline of these complaints concerning this student was from January – April 2019 (presumably over the last 3-4 months). The symptoms of the student again might represent general symptoms that may be caused from a litany of sources, and or circumstances and as such cannot by and of themselves be accepted as objective proof or evidence otherwise specifically linked to or to confirm the identify of anything within the school building as a primary cause or source at this time. Nonetheless, in order to fully validate these concerns a medical note or report at the very least would be required to further help and to reliably justify any presumed concerns that maybe or could be directly linked to the School’s facilities, if any.

Review of Latest Indoor Air/Environmental Quality Assessment – Conducted February 2019

As was indicated in the above mentioned assessment report; the results indicated the following:

1. Visual Results – Room 224

- a. Classroom – Appeared to have been in general tidy condition
- b. East wall shows signs of water damaged and mold growth
- c. Room was taken out of general use

In response to C above, this is agreed as these the closure of this particular classroom was part and parcel of the proactive and preventative response actions that were undertaken when concerns were raised regarding this room by the then primary teacher that was assigned to teach from this classroom.

2. Visual Results – Music Room

- a. Room appears to be in general tidy condition
- b. Presence of strong and foul odor with no immediate indication of source.

In response to B above, these concerns were noted in reports generated in 2016, 2017 and 2018. However, as was the case then and has been confirmed by this February 2019 report; no readily identifiable source could have been determined. However, efforts did continue in earnest and it was determined that the floor was the most likely source for the unexplained odor. As such, the decision was taken even before the undertaking and release of the February 2019 assessment report that the flooring of the music room will be totally dismantled and be replaced with concrete tiles as opposed to board or any other surface finishing that water could easily penetrate. It was also recognized that ventilation need to be improved and the School was advised to regularly open windows and doors to help facilitate natural cross ventilation.

3. Visual Results – Room 221

- a. Appears to be in generally tidy condition
- b. No immediate evidence of water damage or mold growth.

4. General Air Quality Results

- a. Air exchange and ventilation (CO₂) – Slight elevated in Music Room
- b. Temperature – Results (70.5-72.0 deg. F) – Normal Range

c. Relative Humidity – Results – 61.3-71.7% Results Satisfactory

The results at C above are not fully supported. ASHRAE Standard 62.1 – 2016 recommends that relative humidity in occupied spaces be controlled to less than 65% maximum to reduce the likelihood of conditions that may lead to microbial growth.

5. Airborne mold results:

- a. Three (3) air samples were collected – Music Room, Room 224 and Room 221 and one (1) outside control.
- b. Mold levels were elevated (5,030 spores/m³) in the music and slightly elevated at (1,800 spores/m³) in room 224. The dominant mold in both cases was Aspergillus/Penicillium
- c. Mold levels were satisfactory (1,020 spores/m³) in room 221.

The above mentioned report findings must be considered relative to time and space, as well as, the many other variables that must be used and simultaneously assessed against the report findings which is only a representative snapshot of the quality of indoor air and conditions at the time when actual samples were taken in order to objectively interpret and use these types of data. Notwithstanding the foregoing, the report concluded to indicate that mould levels were in one instance slightly elevated and in another elevated (Room 224 and Music Room respectively). So far as it related to room 224; the authors of the report believed that results returned were due to a combination of moisture (water) damage and mould growth on the east wall, coupled with a lack of fresh outside air exchange. The results for the Music Room suggested that the raised wooden platform floor may have been affected by water damage over time and this might be contributing to the foul odor and the levels of mould indicated via the results returned for the particular air sample analyzed for the Music Room. The report went on to indicate that conditions in the Music Room may also be influenced by a lack of fresh outside air entering the space. These conclusions reached and detailed in the latest report confirms what was already presented and for which full corrective actions plans were in place for and which were to be executed by the end of summer 2019.

The report also contained several general and specific recommendations; top amongst which was the fact that although mould levels were determined to be elevated in two instances the levels were manageable and thus provided specific recommendations by location to address the concerns as follows:

- Investigation of moisture intrusion in room 224 and repair as necessary
- Undertake aggressive (comprehensive deep cleaning, as was previously recommended in previous reports and which was to be maintained on a sustained basis) cleaning and daily improve ventilation. By extension this could have been achieved by opening windows and doors and allowing for natural cross ventilation. These recommendations, along with those contained in previous reports could have brought the elevated mould levels back within “normal range” based on the indicative scale contained in the report, if not lower overtime.
- The recommendation for the replace of the floor in the Music Room is agreed. This was the same recommendation made in prior reports, along with improvements being required to be made to the HVAC system, supported by natural means of cross ventilation and or alternatively by properly designed and installed mechanical means.

It should be noted that along with these recommendations contained in the February 2019 Report; further and more detailed and specific recommendations were contained in the previous reports that were not fully followed through or completed acted upon. Notwithstanding, this present report has again provided even more specific recommendations that are to be undertaken within particular timelines that will result in an overall significant reduction in ambient background mould levels generally, increase and improved quality of cleaning, routine facilities upkeep and maintenance, as well as, proactive actions to targeting surrounding environmental and building conditions to aimed at improving indoor air quality, hygiene and sanitation across the School’s facilities.

Following the release of the February 2019 Indoor Air/Environmental Quality Assessment Report; some misunderstanding ensued amongst some personnel as to the proper interpretation of certain terminologies and a number of key terms often used in such reports regarding indoor air quality assessment. Specifically, how these terms are to be used in support of interpreting mould data; and the wrong understanding of which often times cause personnel to panic, stroke fear and unnecessary anxiety. As such they are addressed below for general information and further understanding when reading indoor air quality reports or examining statistical data relating to mould:

Indoor Air Quality - Indoor Air Quality (IAQ) refers to the quality of air within and around buildings, facilities and structures, especially as it relates to the health, safety, wellbeing and comfort of building occupants or users at a specific time and place.

Toxic Mould - The term “toxic mould” is not accurate and is more or less a misnomer, meaning it is a loose term and carries no real objective scientific meaning. The term “toxic mould” more often than not only serves to stir emotions and is therefore highly sensational. Nonetheless, it is accepted that certain moulds are toxigenic, meaning they can produce toxins (specifically, mycotoxins), the moulds themselves are not toxic, or

poisonous. Hazards presented by moulds that may produce mycotoxins should be considered the same as other common moulds which can grow in homes. Wherever one may go there is always some mold in the air, in soil or on the ground, on trees or amongst vegetative covers and on many surfaces in and outside buildings – i.e. molds are ubiquitous – they are everywhere.

Mould Species - Moulds are a large and taxonomically diverse number of fungal species (and genre). The most commonly mould types are Cladosporium, Penicillium, Aspergillus, and Alternaria, Basidiospores, Chaetomium, Ascospores, Curvularia among others. These particular species are most likely to be found indoors and outdoors, as well as, where there has been water damaged and excess moisture and cellulose base materials.

Mycotoxins - A mycotoxin is a toxic secondary metabolite produced by organisms of the fungus kingdom and is capable of causing disease and death in both humans and other animals. The term 'mycotoxin' is usually reserved for the toxic chemical products produced by fungi that readily colonize crops – bearing in mind that one mold species may produce many different mycotoxins, and several species may produce the same mycotoxin.

Secondary Metabolites are organic compounds produced by bacteria, fungi, or plants which are not directly involved in the normal growth, development, or reproduction. Unlike primary metabolites, absence of secondary metabolites does not result in immediate death, but rather in long-term impairment of the organism's survivability, fecundity, or aesthetics, or perhaps in no significant change at all. Specific secondary metabolites are often restricted to a narrow set of species within a phylogenetic group.

Benchmark International or Global Mould Standard – There is no unified acceptable or recognized standard or ultimate international standard setting body for mould against which test results for surface or airborne mould or otherwise can be objectively assessed against as a bench mark because the variables, typical climatic and general environmental conditions are exhaustively too far wide and ultra-varied to be controlled for.

If the above terminologies are understood; then decisions regarding mould should be decided upon not by emotions and unfounded beliefs, but rather on objective scientific data and logical thinking whilst critically evaluating all issues and concerns, using a holistic approach.