

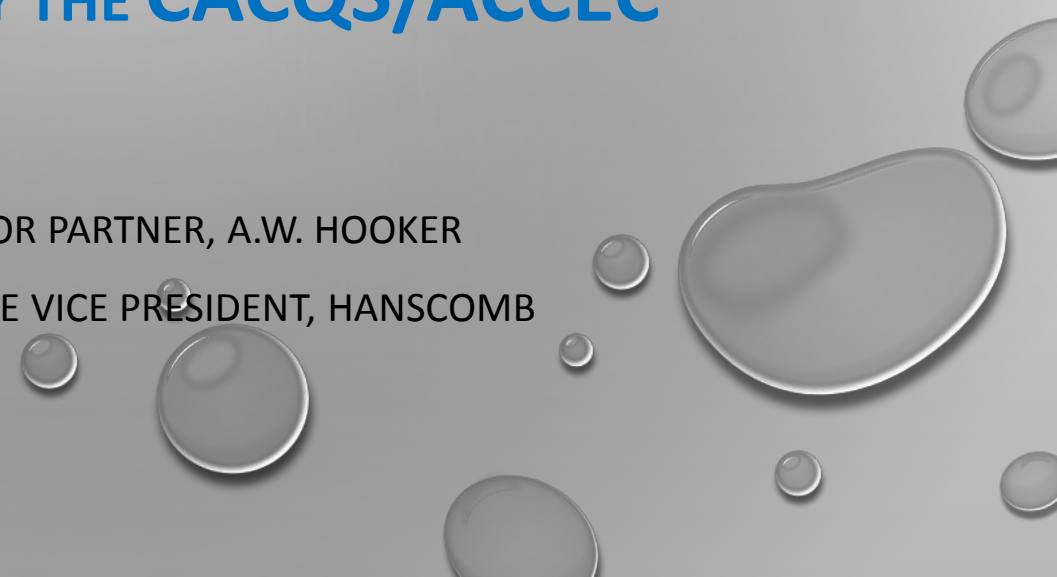


AVOIDING COMMON PITFALLS IN CAPITAL COST MANAGEMENT

A PRESENTATION BY THE CACQS/ACCEC

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WHAT IS THE



THE ASSOCIATION THAT REPRESENTS
FIRM MEMBERS THAT OFFER
INDEPENDENT CONSULTING
QUANTITY SURVEYING SERVICE

WHAT IS A QUANTITY SURVEYOR?

- A PROFESSIONAL THAT MEASURES THE VALUE OF CONSTRUCTION FROM CONCEPT TO COMPLETION
- THE COST CONSULTANTS WHO KNOW ALL THE TRADES AND CAN DEVELOP BUDGETS AND ESTIMATES FROM THE GROUND UP
- PART ARCHITECT...PART ENGINEER...PART GENERAL CONTRACTOR...PART LAWYER AND...PART ACCOUNTANT
- DRIVEN TO KEEP PROJECTS ON TIME AND ON BUDGET

THE ONES TO TAKE THE FIRST LEAP

POWER OF EXPERIENCE

TO MAKE ASSUMPTIONS
THAT HELP DEFINE SCOPE

CIVIL, ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL,
LANDSCAPING, EQUIPMENT PHASING, LOGISTICS, REMEDIATION
BUILDING GROSS FLOOR AREA (GFA)

IT IS EASIER TO CRITIQUE THAN TO CREATE

IN FACT, ONE COULD SAY...

**THE QUANTITY SURVEYOR
DOES PRECISION GUESS WORK
BASED ON UNRELIABLE DATA
PROVIDED BY THOSE OF
QUESTIONABLE KNOWLEDGE**

WHY USE A FIRM FROM CACQS / ACCEC AND NOT JUST A QUANTITY SURVEYOR?

- SOME QUANTITY SURVEYORS WORK FOR QUANTITY SURVEYING FIRMS **BUT** THOSE THAT WORK FOR CONTRACTORS, ENGINEERS, ARCHITECTS OR OWNERS ARE **NOT** CONSIDERED INDEPENDENT
- CACQS/ACCEC FIRM MEMBERS HAVE EXTENSIVE COST DATA BASES AND EMPLOY EXPERIENCED ESTIMATORS
- CACQS/ACCEC FIRM MEMBERS PROVIDE QUANTITY SURVEYING SERVICES AS THEIR CORE BUSINESS
- THE CACQS/ACCEC HOLDS A HIGH STANDARD TO ENSURE FIRM MEMBERS ARE TRULY INDEPENDENT EXPERTS WHO PROVIDE AN OBJECTIVE OPINION ON COST

CAPITAL PRIORITIES OF THE ONTARIO MINISTRY OF EDUCATION:

- SUPPORT BETTER LEARNING FOR STUDENTS WITH BETTER BUILDINGS (MODERN SCHOOLS/ADDITIONS)
- PROMOTE STUDENT SAFETY AND ENERGY EFFICIENCY
- IMPACT STUDENTS' WELL-BEING & PUBLIC CONFIDENCE WITH VISIBLE ELEMENTS (FLOORS, WALLS, CEILINGS, ETC.)
- INCREASE CHILD CARE SPACE
- CONSOLIDATE PROGRAMS TO REDUCE SPACE
- CREATE COMMUNITY HUBS UTILIZING EXISTING SCHOOLS
- SUPPORT FULL-DAY KINDERGARTEN

FUNDING SOURCES FOR ONTARIO SCHOOL CAPITAL PROJECTS

1

- SALE OF EXISTING SCHOOLS...HOWEVER, SOME HAVE LONG TERM LEASES THAT GENERATE REVENUE MAKING THEM LESS DESIRABLE FOR SALE, AND FUNDS MUST BE DIRECTED TO THE BOARD'S RENEWAL BACKLOG RATHER THAN GROWTH
- CAPITAL PRIORITY GRANT – ANNUAL OPPORTUNITY FOR ONTARIO SCHOOL BOARDS TO IDENTIFY PRIORITY PROJECTS THROUGH BUSINESS CASE APPROACH. SCHOOL BOARDS ARE EXPECTED TO USE EXISTING CAPACITY, PROCEEDS OF PROPERTY DISPOSITION AND/OR BOARD CAPITAL FUNDS FIRST
- FULL-DAY KINDERGARTEN CAPITAL FUNDING – FOR NEW CLASSROOMS OR MAJOR RENOVATIONS (~120,000 STUDENTS)

FUNDING SOURCES FOR ONTARIO SCHOOL CAPITAL PROJECTS

2

- SCHOOL CONSOLIDATION CAPITAL – PART OF MINISTRY'S SCHOOL BOARD EFFICIENCIES AND MODERNIZATION (SBEM) INITIATIVE FOR 4 YEAR PERIOD FROM 2014/15 TO 2018/19 ALLOCATED ON A BUSINESS CASE BASIS FOR NEW SCHOOLS, RETROFITS AND ADDITIONS THAT SUPPORT CONSOLIDATION
- SCHOOL CONDITION IMPROVEMENT (SCI) GRANT – ANNUAL ALLOCATION FOR REPAIRS (SIGNIFICANT BACKLOG OF REPAIRS)
- TEMPORARY ACCOMMODATION – PORTABLE MOVES / LEASES / PURCHASES, AND LEASE COSTS FOR PERMANENT STRUCTURES
- EDUCATIONAL DEVELOPMENT CHARGES (EDC) FOR GROWTH

QUICK FACTS FROM THE ONTARIO MINISTRY OF EDUCATION

- THERE ARE OVER 4,900 PUBLICLY FUNDED SCHOOLS IN ONTARIO (4,000 ELEMENTARY AND 920 SECONDARY)
- THESE SCHOOLS REPRESENT 280 MILLION SQUARE FEET OR 2.2 MILLION PUPIL PLACES
- ONTARIO'S ELEMENTARY & SECONDARY SCHOOLS HAVE SIGNIFICANT ENERGY COSTS – NEARLY HALF A BILLION DOLLARS EACH YEAR

CAPITAL AND ONGOING MAINTENANCE COSTS MATTER!

WHAT IS THE CAPITAL BUDGET?

HARD COSTS

- land
- demolition
- construction
- furnishings and equipment

SOFT COSTS

- professional fees
- insurance
- permits
- moving
- taxes

CONTINGENCIES

- design & pricing
- escalation
- post contract

FINANCING, LCC & FM

- cost of borrowing
- cost of replacement
- cost of operating and maintaining

● WHY HAVE A PROJECT BUDGET?

- IN ITS TRUEST FORM, A BUDGET ESTABLISHES A **PLAN** OF HOW MONEY SHOULD BE SPENT
- MOST INVESTORS DON'T HAVE UNLIMITED FUNDS
- INVESTMENTS ARE MADE ON THE EXPECTATION OF A **POSITIVE RETURN** (ECONOMIC AND/OR SOCIAL BENEFIT)
- ATTACHING \$\$\$ TO SCOPE ALLOWS FOR INFORMED DECISIONS

DOES THIS SOUND FAMILIAR?...



WHAT SHOULD A BUDGET CONSIDER?

- PROJECT VISION
- PROJECT SCOPE
- PROCUREMENT STRATEGY
- DESIGN AND CONSTRUCTION SCHEDULE
- REGIONAL GEOGRAPHIC AND SITE FACTORS
- MARKET/ECONOMIC FACTORS

WHO SHOULD DEVELOP THE BUDGET?

- **AUTHORITY (MINISTRY)?** (AT BEST RELY ON BENCHMARKS)
- **OWNER?** (POLITICAL & FINANCIAL PRESSURES)
- **PROGRAMMER/PLANNER?** (FOCUSED ON SPACE)
- **ARCHITECT?** (DRIVEN BY VISION & DESIGN)
- **CONTRACTOR?** (PRICING & PERFORMING WORK)
- **INDEPENDENT 3RD PARTY?** (NO VESTED INTEREST AND VAST EXPERIENCE TO DRAW FROM) ... FIRM MEMBERS OF THE **CACQS/ACCEC**

EVERY PROJECT STARTS WITH A NEED!



EVERY NEED HAS A COST!



While there may be limitations... projects get approved and built every day and having a plan and a budget is critical.

PITFALL NO. 1:

**SCHOOL BOARD SUBMITS NEED BUT
MINISTRY OF EDUCATION SETS THE BUDGET**

PITFALL NO. 1: MINISTRY SETS BUDGET

PROBLEM:

- THE BUDGET IS BEING SET BY AN AUTHORITY THAT IS NOT CLOSE TO THE SPECIFICS OF THE PROJECT
- THE MINISTRY HAS LIMITED RESOURCES TO REVIEW AND CONSIDER THE SUBMISSIONS FOR APPROVAL
- THE MINISTRY HAS LIMITED RESOURCES TO DEVELOP BUDGETS
- THE MINISTRY IS NOT IN A POSITION TO ADJUST THE BUDGET PRIOR TO APPROVAL TO REFLECT UNIQUE ELEMENTS SPECIFIC TO THE SITE AND SCOPE
- ONCE APPROVED, THE BUDGET IS SET MAKING IT VERY DIFFICULT TO MOVE FORWARD IF BUDGET AND SCOPE ARE NOT ALIGNED

BALANCE OF BUDGET AND SCOPE



NEED - A PREDETERMINED GOAL

SCOPE - ELEMENTS NECESSARY TO ACHIEVE GOAL

BUDGET - AMOUNT OF MONEY DEDICATED AND APPROVED BY THE AUTHORITY
HAVING JURISDICTION TO ACHIEVE A PREDETERMINED GOAL

OBJECTIVE IS TO **BALANCE** SCOPE AND BUDGET

PITFALL NO. 1: MINISTRY SETS BUDGET

OPTIONS:

- WORK WITH BUDGET PROVIDED BY MINISTRY USING THE SERVICES OF A TEAM OF EXPERIENCED EXPERTS (ARCHITECT, ENGINEER, QUANTITY SURVEYOR, ETC.) – “IT IS WHAT IT IS”
- TAKE STEPS TO ENSURE THAT SCOPE AND BUDGET ALIGN BY ADJUSTING OR REDUCING SCOPE AS NECESSARY
- MAKE A CASE FOR VARIATION FROM BUDGET FOR CONSIDERATION BY THE MINISTRY
- LIMIT ANY FUTURE VARIATION TO SCOPE – THERE IS NO MORE MONEY

PITFALL NO. 2:

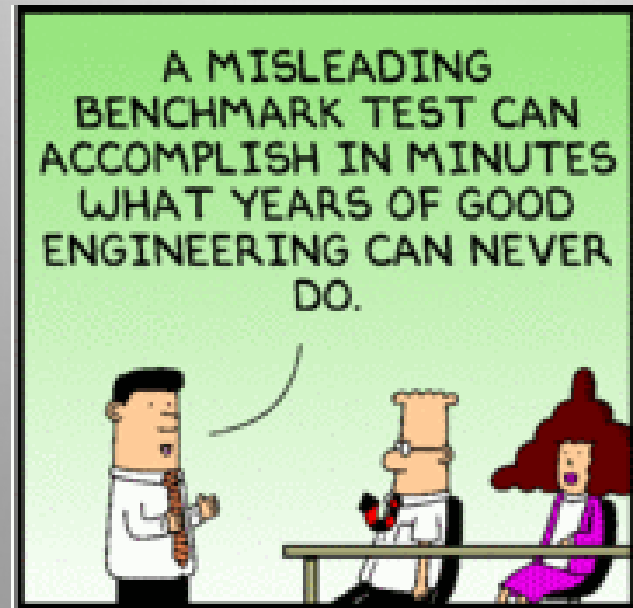
**MINISTRY OF EDUCATION SETS BUDGETS
BASED ON BENCHMARKS**

PITFALL NO. 2: BUDGET BASED ON BENCHMARKS

PROBLEM:

- PERCEPTION THAT BENCHMARKS PROVIDE THE “REAL COST”
- BENCHMARKS ARE A TOOL USED TO CHECK REASONABLENESS
- NO MATTER HOW SIMILAR, NO 2 PROJECTS ARE EXACTLY ALIKE
- MUST BE UPDATED REGULARLY - MINISTRY USES CONSUMER PRICE INDEX (CPI) AND GEOGRAPHICAL FACTORS
- SOMETIMES CPI IS NOT ENOUGH TO ACCOUNT FOR CHANGES IN CODE, STANDARDS AND BEST PRACTICE
- BASED ON HISTORICAL DATA. EVEN FOR RECENT TENDERS, AT LEAST ONE YEAR WILL LAPSE FOR APPROVAL AND DESIGN BEFORE YOUR PROJECT STARTS CONSTRUCTION

● BENCHMARKS ARE A POINT OF REFERENCE...



PITFALL NO. 2: BUDGET BASED ON BENCHMARKS

OPTIONS:

- IDENTIFY PREMIUMS UNIQUE TO LOCATION, SITE CONDITIONS AND PROJECT SCOPE THAT MIGHT EXPLAIN SOME OF THE VARIANCE FROM STANDARD BENCHMARK
- IDENTIFY CHANGES IN CODE AND STANDARDS, IF APPLICABLE
- IF NECESSARY, LOOK TO OTHER RECENTLY TENDERED PROJECTS TO HELP BUILD CASE FOR ANY VARIANCE FROM BENCHMARKS
- REMEMBER TO CONSIDER TIMELINE FOR PROJECT...GENERALLY A PROJECT WILL REQUIRE AT LEAST ONE YEAR TO TAKE IT FROM CONCEPT TO CONSTRUCTION – SO INCLUDE FOR ESCALATION

PITFALL NO. 3:

LACK OF TRANSPARENCY

PITFALL NO. 3: LACK OF TRANSPARENCY

PROBLEM:

- TO PROPERLY PLAN AND DESIGN A PROJECT, THE BUDGET NEEDS TO BE UNDERSTOOD
- LACK OF TRANSPARENCY WITH BUDGETS CREATES MISTRUST
- CONSULTANTS AND/OR BOARDS MAY SOMETIMES PUSH THE ENVELOPE TO TEST THE “REAL BUDGET”
- CONTINUED REQUESTS FOR TARGETED SAVINGS CAN DEFLATE A TEAM’S MOTIVATION

DOES THIS SOUND FAMILIAR?...



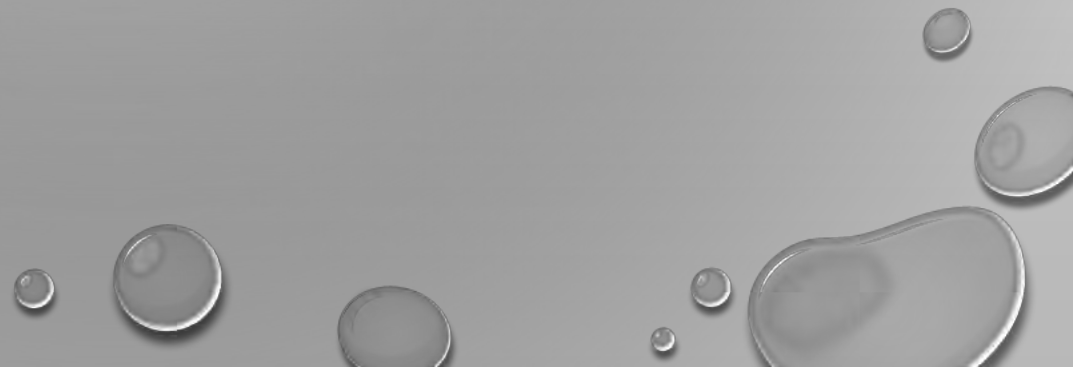
PITFALL NO. 3: LACK OF TRANSPARENCY

OPTIONS:

- SHARE INFORMATION ON THIS AND OTHER SIMILAR PROJECTS TO PROVIDE AS MUCH CONTEXT AND SUPPORT TO THE ENTIRE TEAM
 - EXPERIENCE AND TRUST MATTER
 - A BUDGET/ESTIMATE IS ONLY AS GOOD AS THE INPUT IT IS BASED ON
- DOCUMENT ASSUMPTIONS, INCLUSIONS AND EXCLUSIONS
- HIGHLIGHT PRIORITIES AND PRESSURE POINTS OF A BUDGET - ONLY WHEN THESE KEY INDICATORS ARE UNDERSTOOD CAN THE DESIGN TEAM AND SCHOOL BOARD MAKE INFORMED DECISIONS ON WHERE TO SPEND AND WHERE TO CUT

PITFALL NO. 4:

**TEMPTATION TO REDUCE OR ELIMINATE
CONTINGENCY**



PITFALL NO. 4: REDUCE/ELIMINATE CONTINGENCY

PROBLEM:

- LIMIT FLEXIBILITY FOR DESIGN EVOLUTION
- CONTINGENCY PLANNING IS A NECESSARY PART OF BUDGET DEVELOPMENT AND THE MITIGATION OF RISK – IN EARLY STAGES, WE DON'T KNOW YET ALL THE POTENTIAL RISKS
- CONTINGENCY TYPICALLY INCLUDES:
 - DESIGN & PRICING ALLOWANCE
 - ESCALATION ALLOWANCE
 - CONSTRUCTION (POST CONTRACT) ALLOWANCE
- BECAUSE BUDGETS ARE TYPICALLY TIGHT, CONTINGENCY IS THE FIRST TARGET FOR SAVINGS

DOES THIS SOUND FAMILIAR?...



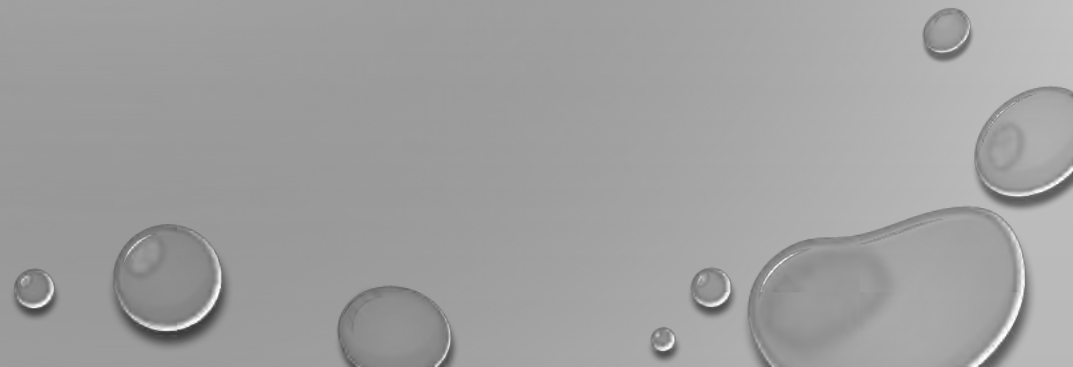
PITFALL NO. 4: REDUCE/ELIMINATE CONTINGENCY

OPTIONS:

- DEVELOP RIGHT BALANCE OF CONTINGENCY TO PROTECT INTEREST OF PROJECT WITHOUT COMPROMISING SCOPE
- WORK WITH DESIGN TEAM AND QUANTITY SURVEYOR TO IDENTIFY AS MANY RISK ITEMS EARLY IN THE PROJECT
- REDUCE RISK THROUGH PLANNING AND DESIGN (I.E. IF SOILS SUSPECT, COMPLETE GEOTECHNICAL TESTING, HAVE ENGINEERS DEVELOP COST EFFECTIVE SOLUTIONS AND QUANTIFY COST PREMIUM AS PART OF COST RECONCILIATION)

PITFALL NO. 5:

**TEMPTATION TO ADD OR MODIFY SCOPE FOR
THIS “ONCE IN A LIFETIME” PROJECT**



PITFALL NO. 5: TEMPTATION FOR ADDED SCOPE

PROBLEM:

- FUNDING FOR A PROJECT IS TYPICALLY TIGHT
- THERE IS GENERALLY NO ROOM FOR ENHANCEMENTS OR ADDED SCOPE
- OVER BUDGET PROJECTS DO NOT GET APPROVED TO GO TO TENDER AND GET STUCK IN A VERY DIFFICULT PLACE NOT ONLY FOR THE CONSULTANT TEAM BUT FOR THE SCHOOL BOARD
- CHANGES COST MONEY

DOES THIS SOUND FAMILIAR?...

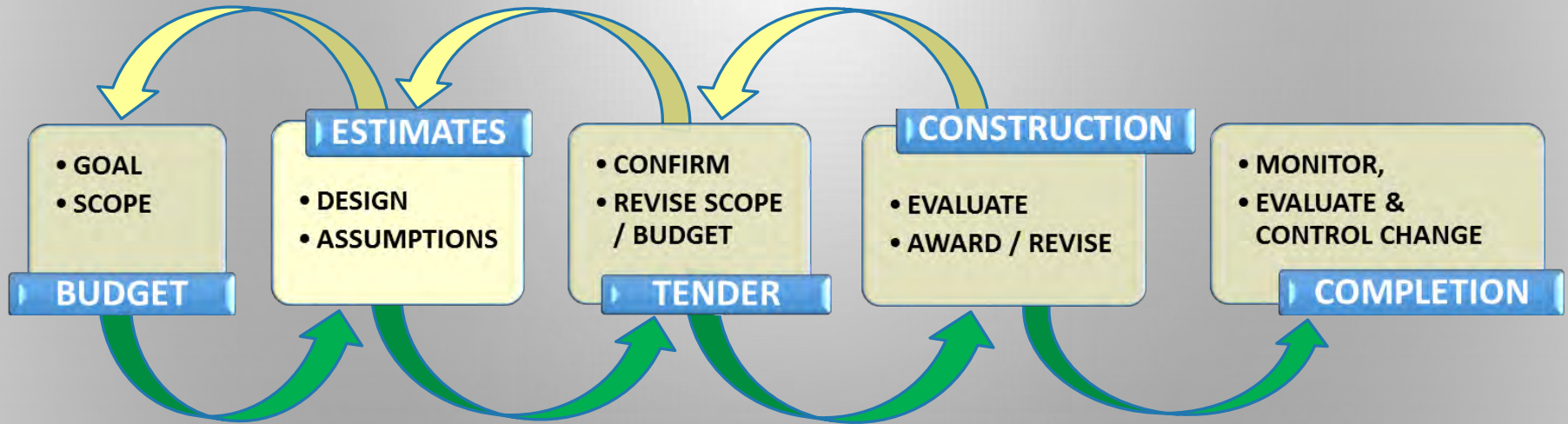


PITFALL NO. 5: TEMPTATION FOR ADDED SCOPE

OPTIONS:

- SET SCOPE EXPECTATIONS LOWER
- ENCOURAGE THE EFFORT BE DRIVEN BY THE SCHOOL BOARD BECAUSE THE DESIGN TEAM IS GENERALLY RELUCTANT TO ADVISE CLIENTS TO LOWER EXPECTATIONS
- RETAIN REPUTABLE ARCHITECTS, ENGINEERS AND QUANTITY SURVEYORS WHO ARE COMMITTED TO BUDGET AND SCOPE
- WORK WITH DESIGN TEAM AND QUANTITY SURVEYOR TO DEVELOP STRATEGIES FOR COST SAVINGS THROUGH “ALTERNATIVE PRICES”
- HAVE MILESTONE ESTIMATES PREPARED BY INDEPENDENT QUANTITY SURVEYOR TO CHECK THAT BUDGET AND SCOPE ALIGN USING THE COST PLANNING & CONTROL PROCESS

COST PLANNING & CONTROL PROCESS



ESTIMATE: A '**SNAPSHOT**' AT A PARTICULAR POINT IN TIME OF THE PROBABLE COST OF A PROJECT BASED ON AVAILABLE INFORMATION



PITFALL NO. 6:

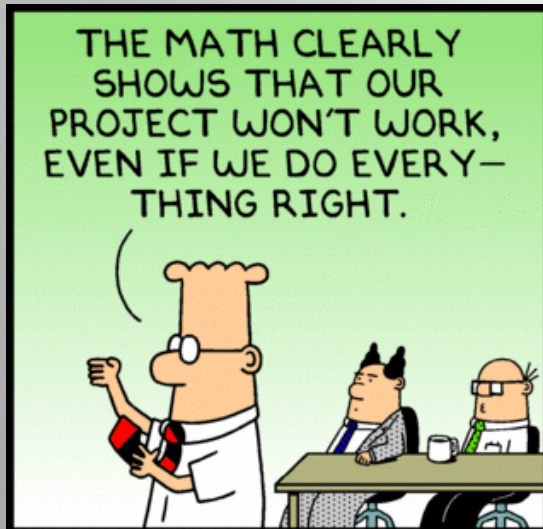
IGNORING THERE IS A PROBLEM

PITFALL NO. 6: IGNORING THERE IS PROBLEM

PROBLEM:

- PROBLEMS WITH SCOPE AND BUDGET RARELY GO AWAY
- FOSTERS FALSE SENSE OF COMFORT
- GIVES TEAM IMPRESSION THAT BUDGET IS NOT CRITICAL
- CHALLENGING ESTIMATES, ASSUMPTIONS AND SCOPE IS IMPORTANT TO MAKE SURE SOUND DECISIONS ARE BEING MADE
- SIMPLY ASSUMING ESTIMATES ARE OVERSTATED OR WRONG IS NOT WISE
- HOPING THE MARKET MAY CORRECT A SITUATION IS A RECIPE FOR DISASTER

DOES THIS SOUND FAMILIAR?



PITFALL NO. 6: IGNORING THERE IS PROBLEM

OPTIONS:

- FACE THE PROBLEM AND LOOK FOR ANSWERS
- IF SCOPE IS EXCEEDING BUDGET AND BENCHMARKS, FIND OUT WHY
- TAKE STEPS TO REIGN IN SCOPE AND COSTS, WHEREVER POSSIBLE
- ENGAGE MINISTRY WHEN EVIDENCE POINTS TO ISSUES BEYOND CONTROL THAT CAN NOT BE MITIGATED WITH VALUE ENGINEERING
- WORK WITH PROJECT TEAM AND MINISTRY TO DEVELOP A PLAN – SOLUTIONS COME EASIER WHEN ALL STAKEHOLDERS COLLABORATE
- BUILD A TEAM THAT IS COMMITTED TO THE BUDGET AND SCOPE AND WILLING TO GO THAT EXTRA MILE TO FIND A SOLUTION

WHO SHOULD MONITOR COSTS?

IDEALLY AN INDEPENDENT EXPERT - **QUANTITY SURVEYOR**

- NO VESTED INTEREST IN PROJECT - BUSINESS RELIES ON THEIR ABILITY TO CONSISTENTLY PREDICT THE MARKET BASED ON A STRUCTURED APPROACH
- UNDERSTAND THAT EACH PROJECT HAS A UNIQUE SET OF CIRCUMSTANCES AND CAN DRAW ON VAST EXPERIENCE AND OBJECTIVELY CONSIDER THE EXPERIENCE OF SCHOOL BOARD AND ARCHITECT
- CAPABLE OF PROVIDING DIFFERENT REPORTING NEEDS FOR DIFFERENT STAKEHOLDERS

WHERE CAN YOU FIND AN INDEPENDENT QUANTITY SURVEYOR?



THANK YOU - QUESTIONS?