# PAVEMENT MONITORING

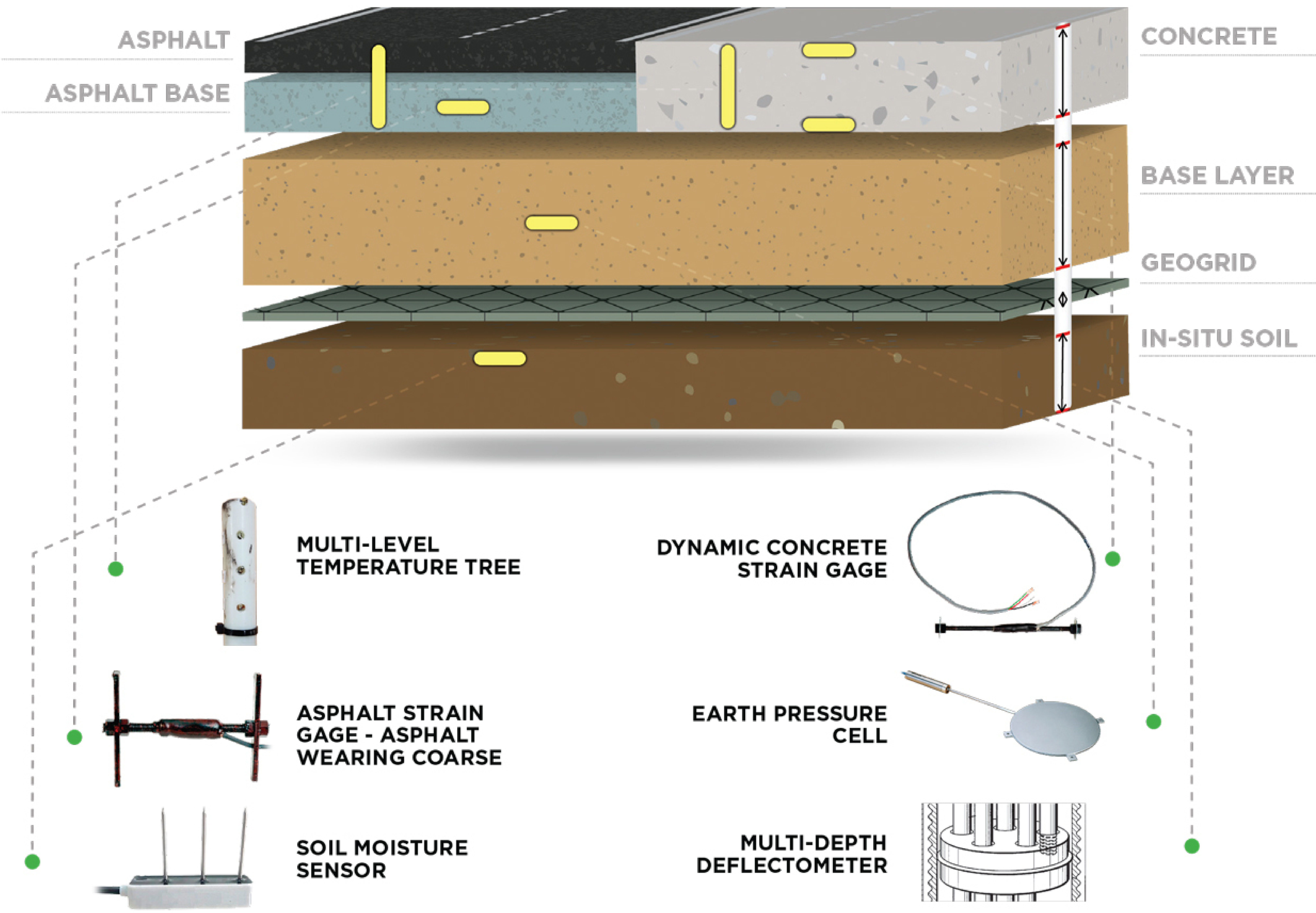
RAW DATA. REFINED RESULTS.


MONITORING CRITICAL INFRASTRUCTURE

SINCE 1989

BDI'S PAVEMENT SENSOR DESIGN ENGINEER HAS BEEN PROVIDING THIS LINE OF PAVEMENT INSTRUMENTATION TO RESEARCH INSTITUTIONS FOR MORE THAN 20 YEARS. THESE INSTITUTIONS INCLUDE THE ACCELERATED PAVEMENT TEST FACILITIES FOR THE FAA, FHWA, NCAT, MNROAD, USACE, KOREAN HIGHWAY DEPARTMENT AND UNIVERSITIES ACROSS THE GLOBE. COUPLED WITH BDI'S DATA ACQUISITION HARDWARE AND SOFTWARE CAPABILITIES, COMPLETE PAVEMENT INSTRUMENTATION SOLUTIONS CAN BE PROVIDED. WHILE SIMILAR INSTRUMENTS MAY BE SUPPLIED BY OTHERS, ONLY BDI PROVIDES THE IN-HOUSE EXPERTISE FOR THE DESIGN, INSTALLATION AND INTEGRATION OF COMPLETE TURN-KEY SYSTEM SOLUTIONS BASED ON USER EXPERIENCE AND FEEDBACK FROM THESE LEADING INSTITUTIONS.

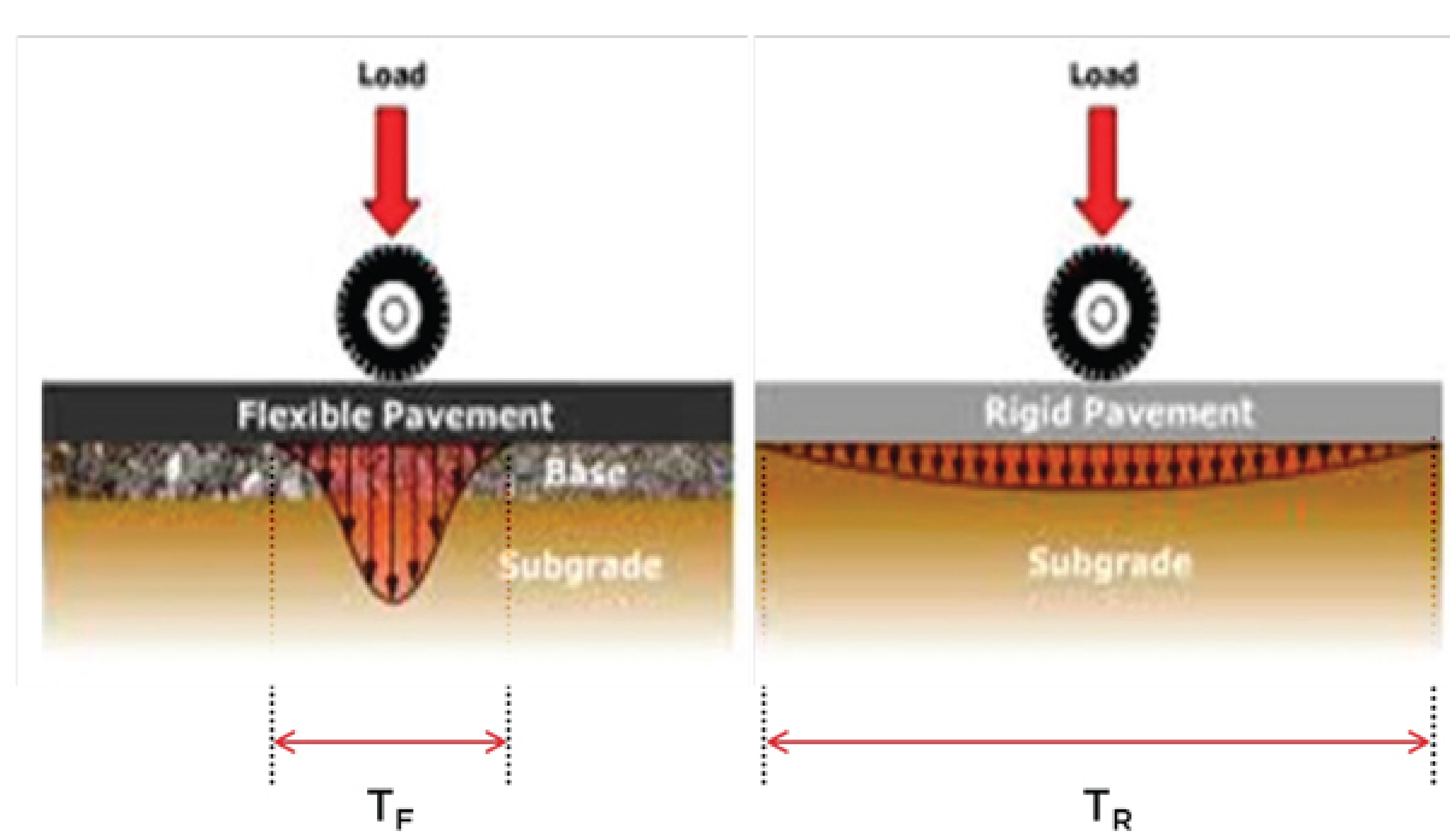
# WHAT
# WE MEASURE




## Sample Speed Rate

To define the influence zone curve under $T_F$ and $T_R$, we recommend a minimum of 30 data point with a much more accurate curve developed with 60 data points.

| Data Rates | 35mph (60 kph) | 75mph (120 kph) |
|---|---|---|
| TF: 30 data points | 171 S/s | 365 S/s |
| TF: 60 data points | 342 S/s | **731 S/s** |
| TR: 30 data points | 64 S/s | 136 S/s |
| TR: 60 data points | 127 S/s | 227 S/s |

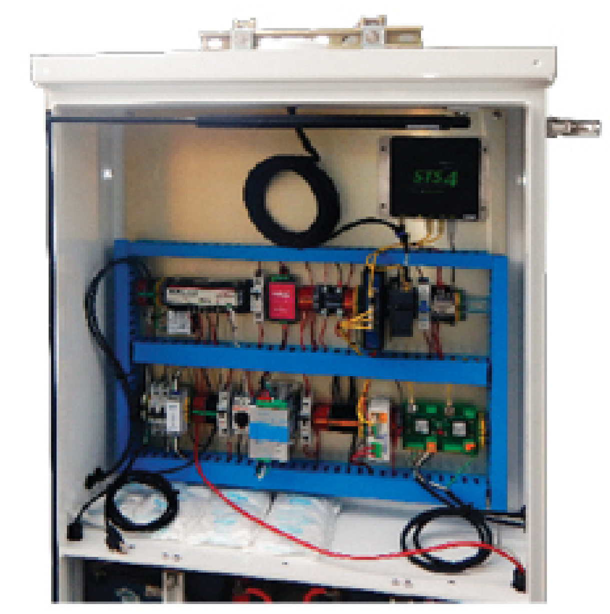


# **HOW**
# WE MEASURE IT

Based on our successful STS4 architecture, we have developed a modular Structural Monitoring System that can be applied in laboratory research projects or large scale, high-speed, permanent monitoring systems. We've once again taken the lessons learned over hundreds of monitoring projects and put them into the design of our hardware. With simple power and communication options, our systems sample up to 1,000 S/s and coupled with easy-to-configure software, they can be designed and installed more efficiently than anything else on the market.

**4- OR 16-CHANNEL TERMINAL NODES**

**CORE DATA LOGGER**



**MONITORING ACCESSORIES**

# **HOW**
# WE MANAGE DATA

**Platform**Interactive
ONLINE SENSOR MANAGEMENT

### PLATFORM INTERACTIVE DATA HOSTING

Data hosting through Microsoft® Azure that allows:

+ Simple and secure data measurement
+ 24/7 staffed service center
+ Custom alerts and notifications
+ Advanced graphing options

### DATA TRANSFER

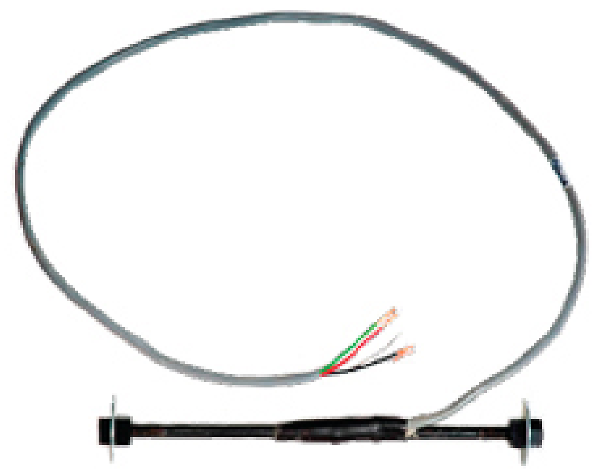
+ **STS-SYNC:** Microsoft® Windows® application to collect data on a defined schedule.
+ **Client Servers:** The Core Data Logger can be configured to push data to a client designated server.


### SETUP/CONFIGURATION

+ **STS-MONITOR** is used for configuring the system, either remotely or through direct on-site connection.
+ Systems can be preconfigured by BDI or by the Client.

# **PAVEMENT** SENSORS

DYNAMIC ASPHALT STRAIN GAGES

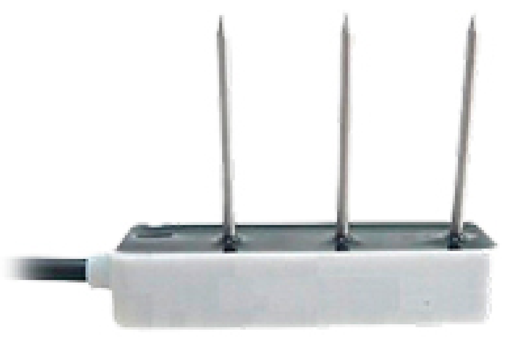


DYNAMIC CONCRETE STRAIN GAGES

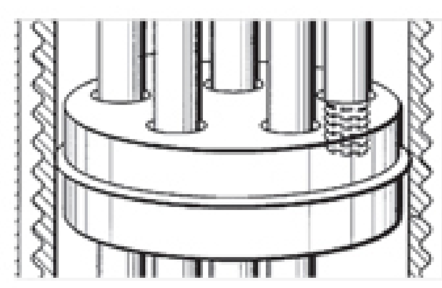
SOIL COMPRESSION GAGES

TEMPERATURE TREE

EARTH PRESSURE CELL



SOIL MOISTURE SENSOR



MULTI-DEPTH DEFLECTOMETER (MDD)

PRESSURE TRANSDUCER


FOIL GAGE + COMPLETION MODULE


THERMISTOR

# **BACK**GROUND

## Accelerated Pavement Test Facilities/Vehicles


## FAAs National Airport Pavement Test Facility

+ 1000+ Sensors
+ Concrete Strain Gages
+ Asphalt Strain Gages
+ Temperature Trees
+ Soil Compression Gages
+ Soil Pressure Cells
+ Soil Moisture Gages
+ Multi-Depth Deflectometer

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