

HYDROSENSE- SMART SOLUTIONS FOR DAY TO DAY LIFE

AIR CONDITIONERS HAVE BECOME A HOUSEHOLD STAPLE TODAY. BUT HAVE WE EVER PAUSED TO THINK HOW ARE ACS CONNECTED TO WATER CONSERVATION? STUDIES SHOW THAT A 1-1.5 TON AC CAN GENERATE 20-25 LITRES OF CONDENSED WATER WHEN USED FOR 6-8 HOURS A DAY.

AND WHAT HAPPENS TO THIS WATER? IN MOST HOMES, IT'S SIMPLY WASTED.

HOWEVER, THIS CONDENSED WATER CAN ACTUALLY BE PUT TO EXCELLENT USE IN DAILY HOUSEHOLD TASKS ESPECIALLY IN THE TOILET FLUSH, WHERE EVERY FLUSH CONSUMES NEARLY 5-6 LITRES OF DRINKING WATER. THE CONDENSED WATER FROM ACS IS NOT SUITABLE FOR DRINKING AS IT LACKS MINERALS AND MAY CONTAIN IMPURITIES, BUT IT IS PERFECTLY USABLE FOR NON-POTABLE PURPOSES LIKE FLUSHING AND CERTAIN TYPES OF WASHING.

THINK ABOUT IT HOW MANY AC'S DO WE HAVE AT HOME?

MOST HOUSEHOLDS HAVE 2-3 UNITS, WHILE SCHOOLS, COLLEGES, HOSPITALS, MALLS, AND WORKPLACES HAVE HUNDREDS. DURING SUMMER, EVEN TWO ACS RUNNING IN A

HOME CAN PRODUCE 45-50 LITRES OF CONDENSED WATER PER DAY. IN HUMID REGIONS, THIS CAN INCREASE TO 60 LITRES OR MORE.

NOW IMAGINE IF EVERY HOUSEHOLD AND INSTITUTION STARTED SAVING THIS WATER INSTEAD OF LETTING IT DRAIN AWAY. THE COLLECTIVE IMPACT WOULD BE MASSIVE.



SYSTEM & INNOVATION

TO TACKLE THIS ISSUE, WE HAVE DEVELOPED A SYSTEM THAT REDIRECTS AC-CONDENSED WATER INTO A CENTRALISED STORAGE TANK. A BUILT-IN WATER-LEVEL SENSOR MONITORS THE TANK, ENSURING EFFICIENT USAGE:

- IF WATER IS AVAILABLE IN THE CENTRAL TANK, THE SYSTEM AUTOMATICALLY USES IT FOR FLUSHING AND TAP SUPPLY.
- IF THE TANK IS EMPTY OR LOW, THE SYSTEM SWITCHES TO THE OVERHEAD TANK AS USUAL.

HYDROSENSE FURTHER ENHANCES WATER SUSTAINABILITY BY INTEGRATING RO REJECT WATER WITH AC CONDENSATE IN A CENTRALIZED STORAGE RESERVOIR. THIS DUAL-SOURCE WATER RECOVERY APPROACH MAXIMIZES RESOURCE UTILIZATION, ENABLING RECLAIMED WATER TO BE REUSED FOR TOILET FLUSHING AND OTHER NON-POTABLE APPLICATIONS. THE INTEGRATED SYSTEM SIGNIFICANTLY REDUCES POTABLE WATER DEMAND, IMPROVES WATER-USE EFFICIENCY, AND SUPPORTS A CIRCULAR WATER MANAGEMENT MODEL.

MIST TAP

ADDITIONALLY, WE CREATED AN INNOVATION CALLED THE **MIST TAP**, DESIGNED TO REDUCE WATER CONSUMPTION SIGNIFICANTLY. A MIST TAP CAN CUT WATER USAGE BY UP TO 80% COMPARED TO A REGULAR TAP, MAKING IT IDEAL FOR BATHROOMS, SCHOOLS, HOSTELS, AND PUBLIC PLACES.

WE BELIEVE THAT THIS SIMPLE YET PRACTICAL IDEA HAS THE POTENTIAL TO SAVE HUGE AMOUNTS OF DRINKABLE WATER EVERY SINGLE DAY. A SMALL STEP TODAY CAN PROTECT PRECIOUS WATER RESOURCES FOR THE GENERATIONS TO COME.



REVERSE OSMOSIS (RO) WATER PURIFIERS PRODUCE PURIFIED WATER, BUT DURING THE PURIFICATION PROCESS THEY ALSO GENERATE **REJECT WATER**. THIS REJECT WATER IS OFTEN SENT DIRECTLY INTO THE DRAIN, EVEN THOUGH IT CAN STILL BE USEFUL FOR MANY **NON-POTABLE PURPOSES**.

HYDROSENSE PROPOSES COLLECTING THIS RO REJECT WATER INSTEAD OF ALLOWING IT TO BE WASTED. THE REJECT-WATER OUTLET CAN BE CONNECTED TO THE SAME **CENTRALIZED STORAGE TANK** USED FOR AC CONDENSATE.

THE SYSTEM THEREFORE COLLECTS TWO SOURCES:



AC CONDENSATE + RO REJECT WATER → CENTRAL STORAGE TANK

THE RECOVERED WATER CAN THEN BE USED FOR SUITABLE NON-POTABLE APPLICATIONS, SUCH AS:

-  TOILET FLUSHING
-  FLOOR CLEANING
-  CERTAIN WASHING/CLEANING ACTIVITIES
-  GARDENING, WHERE THE WATER QUALITY IS SUITABLE
-  OTHER HOUSEHOLD OR INSTITUTIONAL USES THAT DO NOT REQUIRE DRINKING-QUALITY WATER

THE IMPORTANT POINT IS THAT RO REJECT WATER SHOULD NOT BE TREATED AS DRINKING WATER. HYDROSENSE INSTEAD GIVES IT A SECOND PURPOSE BY DIRECTING IT TOWARD APPLICATIONS WHERE POTABLE WATER IS UNNECESSARY.

WHY THIS IS IMPORTANT

IMAGINE A HOUSE WHERE BOTH AN AC AND AN RO PURIFIER ARE OPERATING. INSTEAD OF:

AC WATER → DRAIN

RO REJECT WATER → DRAIN

HYDROSENSE CHANGES THE SYSTEM TO:

AC WATER → COLLECTION → STORAGE

RO REJECT WATER → COLLECTION → STORAGE

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CENTRALIZED RECOVERED-WATER TANK

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FLUSHING & OTHER SUITABLE NON-POTABLE USES

THIS MEANS THE SAME BUILDING CAN REDUCE ITS DEPENDENCE ON **FRESH POTABLE WATER** FOR EVERYDAY ACTIVITIES THAT DON'T ACTUALLY REQUIRE DRINKING-QUALITY WATER.

THE BIGGER IDEA

HYDROSENSE FOLLOWS A “**RECOVER → STORE → REUSE**” APPROACH. RATHER THAN SEEING AC CONDENSATE AND RO REJECT WATER AS WASTE STREAMS, THE SYSTEM TREATS THEM AS **RECOVERABLE WATER RESOURCES**.